



United Republic of Tanzania

NATIONAL SAMPLE CENSUS OF AGRICULTURE
2002/2003

Volume Vc: REGIONAL REPORT: **KILIMANJARO REGION**



Cattle Rearing



Fish Harvesting



Eggs Production



Maize Planting



Paddy Growing



Hand Cultivation



Indigenous Chicken



Irrigation Practice



Orange Marketing



Cassava Planting



Goats Rearing



United Republic of Tanzania



**NATIONAL SAMPLE CENSUS
OF AGRICULTURE
2002/2003**

VOLUME Vc: REGIONAL REPORT: KILIMANJARO REGION

*National Bureau of Statistics, Ministry of agriculture and Food Security,
Ministry of Water and Livestock Development, Ministry of Cooperatives and Marketing,
Presidents Office, Regional Administration and Local Government,
Ministry of Finance and Economic Affairs – Zanzibar*

December 2007

TABLE OF CONTENTS

Table of contents	i
Acronyms	vi
Preface.....	vii
Executive summary	vi
Illustrations.....	xii
ENSUS RESULTS AND ANALYSIS	
PART I: BACKGROUND INFORMATION	1
1.1 Introduction	1
1.2 Geographical Location and Boundaries	1
1.3 Land Area	1
1.4 Climate	1
1.4.1 Temperature	1
1.4.2 Rainfall.....	1
1.5 Population	1
1.6 Socio-economic Indicators.....	2
PART II: INTRODUCTION	3
2.1 The Rationale for Conducting the National Sample Census of Agriculture.....	3
2.2 Census Objectives	3
2.3 Census Coverage and Scope.....	4
2.4 Legal Authority of the National Sample Census of Agriculture	5
2.5 Reference Period	5
2.6 Census Methodology	5
2.6.1 Census Organization	5
2.6.2 Tabulation Plan	6
2.6.3 Sample Design	6
2.6.4 Questionnaire Design and Other Census Instruments.....	7
2.6.5 Field Pre-Testing of the Census Instruments	7
2.6.6 Training of Trainers, Supervisors and Enumerators	7
2.6.7 Information, Education and Communication (IEC) Campaign.....	7
2.6.8 Household Listing	8
2.6.9 Data Collection	8
2.6.10 Field Supervision and Consistency Checks	8
2.6.11 Data Processing.....	8
- Manual Editing	9
- Data Entry.....	9
- Data Structure Formatting	9
- Batch Validation	9
- Tabulations.....	9
- Analysis and Report Preparations.....	9
- Data Quality	10
2.7 Funding Arrangements	10
PART III: CENSUS RESULTS AND ANALYSIS.....	11
3.1 Holding Characteristics	11
3.1.1 Type of Holdings	11
3.1.2 Livelihood Activities/Source of Income	11
3.1.3 Sex and Age of Heads of Households.....	11
3.1.4 Number of Household Members.....	15
3.1.5 Level of Education.....	15
- Literacy	15
- Literacy Level for Household Members.....	15

	- Literacy Rates for Heads of Households	15
	- Educational Status.....	16
	3.1.6 Off-farm Income	16
3.2	Land Use	17
	3.2.1 Area of Land Utilised.....	17
	3.2.2 Types of Land use.....	18
3.3	Annual Crops and Vegetable Production	18
	3.3.1 Area Planted.....	18
	3.3.2 Crop Importance	20
	3.3.3 Crop Types.....	20
	3.3.4 Cereal Crop Production.....	22
	3.3.4.1 Maize	23
	3.3.4.2 Paddy	23
	3.3.4.3 Other Cereals	26
	3.3.5 Roots and Tuber Crops Production	26
	3.3.5.1 Cassava	27
	3.3.5.2 Irish Potatoes	28
	3.3.6 Pulse Crops Production.....	28
	3.3.6.1 Beans.....	30
	3.3.7 Oil Seed Production	32
	3.3.7.1 Groundnuts	32
	3.3.8 Fruits and Vegetables.....	33
	3.3.8.1 Tomatoes.....	35
	3.3.8.2 Cabbage	37
	3.3.8.3 Chillies.....	37
	3.3.9 Other Annual Crops Production.....	40
	3.3.9.1 Cotton	40
	3.3.9.2 Tobacco.....	40
3.4	Permanent Crops	40
	3.4.1 Coconuts	43
	3.4.2 Oranges	45
	3.4.3 Banana	45
	3.4.4 Cashew Nuts	45
3.5	Inputs/Implements Use	48
	3.5.1 Methods of land clearing.....	48
	3.5.2 Methods of soil preparation	48
	3.5.3 Improved seeds use	50
	3.5.4 Fertilizers use	51
	3.5.4.1 Farm Yard Manure Use	51
	3.5.4.2 Inorganic Fertilizer Use	52
	3.5.4.3 Compost Use.....	53
	3.5.5 Pesticide Use.....	54
	3.5.5.1 Insecticide Use.....	54
	3.5.5.2 Herbicide Use	55
	3.5.5.3 Fungicide Use	55
	3.5.6 Harvesting Methods	56

3.5.7	Threshing Methods	56
3.6	Irrigation	56
3.6.1	Area planted with annual crops and under irrigation	56
3.6.2	Sources of water used for irrigation	57
3.6.3	Methods of obtaining water for irrigation	59
3.6.4	Methods of water application	59
3.7	Crop Storage, Processing and Marketing	59
3.7.1	Crop Storage	59
3.7.1.1	Method of Storage	60
3.7.1.2	Duration of Storage	60
3.7.1.3	Purpose of Storage	61
3.7.1.4	The Magnitude of Storage Loss	61
3.7.2	Agro processing and by-products	62
3.7.2.1	Processing Methods	62
3.7.2.2	Main Agro-processing Products	62
3.7.2.3	Main use of primary processed Products	63
3.7.2.4	Outlet for Sale of Processed Products	63
3.7.3	Crop Marketing	64
3.7.3.1	Main Marketing Problems	64
3.7.3.2	Reasons for Not Selling	64
3.8	Access to Crop Production Services	65
3.8.1	Access to Agricultural Credits	65
3.8.1.1	Source of Agricultural Credits	65
3.8.1.2	Use of Agricultural Credits	65
3.8.1.3	Reasons for not using agricultural credits	66
3.8.2	Crop Extension	66
3.8.2.1	Sources of crop extension messages	66
3.8.2.2	Quality of extension	68
3.9	Access to Inputs	68
3.9.2	Inorganic Fertilisers	68
3.9.3	Improved Seeds	69
3.9.4	Insecticides and Fungicide	69
3.10	Tree Planting	70
3.11	Irrigation and Erosion Control Facilities	71
3.12	Livestock Results	73
3.12.1	Cattle Production	73
3.12.1.1	Cattle Population	73
3.12.1.2	Herd size	73
3.12.1.3	Cattle Population Trend	75
3.12.1.4	Improved Cattle Breeds	75
3.12.2	Goat Production	75

3.12.2.1	Goat Population	75
3.12.2.2	Goat Herd Size.....	77
3.12.2.3	Goat Breeds	77
3.12.2.4	Goat Population Trend.....	77
3.12.3	Sheep Production	77
3.12.3.1	Sheep Population	77
3.12.3.2	Sheep Population Trend.....	79
3.12.4	Pig Production.....	79
3.12.4.1	Pig Population Trend	79
3.12.5	Chicken Production.....	81
3.12.5.1	Chicken Population.....	81
3.12.5.2	Chicken Population Trend	81
3.12.5.3	Chicken Flock Size	81
3.12.5.4	Improved Chicken Breeds (layers and broilers)	82
3.12.6	Other Livestock.....	82
3.12.7	Pests and Parasites Incidences and Control	82
3.12.7.1	Deworming	82
3.12.8	Access to Livestock Services	84
3.12.8.1	Access to livestock extension Services.....	84
3.12.8.2	Access to Veterinary Clinic	84
3.12.8.3	Access to village watering points/dam	85
3.12.9	Animal Contribution to Crop Production.....	85
3.12.9.1	Use of Draft Power	85
3.12.9.2	Use of Farm Yard Manure	86
3.12.9.4	Use of Compost	86
3.12.10	Fish Farming	86
3.6.0	Access to Infrastructure and Other Services	89
3.13	Poverty Indicators.....	89
3.13.1	Access to Infrastructure and Other Services	89
3.13.2	Type of Toilets.....	90
3.13.3	Household's assets	90
3.13.4	Sources of Light Energy	90
3.13.5	Sources of Energy for Cooking.....	90
3.13.6	Roofing Materials	91
3.13.7	Access to Drink Water	91
3.13.8	Food Consumption Pattern.....	92
3.13.8.1	Number of Meals per Day	92
3.13.8.2	Meat Consumption Frequencies	92
3.13.8.3	Fish Consumption Frequencies.....	92
3.13.9	Food Security	92
3.13.10	Main Source of Cash Income.....	93

PART IV: KILIMANJARO PROFILES	109
4.1 Region Profile	109
4.2 District Profiles	109
4.2.1 Rombo.....	110
4.2.2 Mwanga.....	112
4.2.3 Same.....	114
4.2.4 Moshi Rural.....	116
4.2.5 Hai	119

ACRONYMS

<i>ASDP</i>	<i>Agricultural Sector Development Project</i>
<i>CSPro</i>	<i>Census and Survey Processing Program</i>
<i>DFID</i>	<i>Department for International Development</i>
<i>DIAS</i>	<i>District Integrated Agricultural Survey</i>
<i>DS</i>	<i>District Supervisor</i>
<i>EAS</i>	<i>Expanded Agricultural Survey</i>
<i>EAs</i>	<i>Enumeration Areas</i>
<i>EU</i>	<i>European Union</i>
<i>FE</i>	<i>Field Enumerator</i>
<i>GDP</i>	<i>Gross Domestic Product</i>
<i>Ha</i>	<i>Hectares</i>
<i>IAS</i>	<i>Integrated Agricultural Survey</i>
<i>ICR</i>	<i>Intelligent Character Recognition</i>
<i>IEC</i>	<i>Information, Education and Communication</i>
<i>JICA</i>	<i>Japanese International Cooperation Agency</i>
<i>LRS</i>	<i>Long Rainy Season,</i>
<i>MAFS</i>	<i>Ministry of Agriculture and Food Security</i>
<i>MCM</i>	<i>Ministry of Co-operatives and Marketing</i>
<i>MWLD</i>	<i>Ministry of Water and Livestock Development</i>
<i>NBS</i>	<i>National Bureau of Statistics</i>
<i>NGO</i>	<i>Non Governmental Organization</i>
<i>NMS</i>	<i>National Master Sample</i>
<i>NSCA</i>	<i>National Sample Census of Agriculture</i>
<i>NSGRP</i>	<i>National Strategy for Growth and Reduction of Poverty</i>
<i>PORALG</i>	<i>President's Office, Regional Administration and Local Government</i>
<i>PPS</i>	<i>Probability Proportional to Size</i>
<i>PSU</i>	<i>Primary Sampling Unit</i>
<i>RAAS</i>	<i>Rapid Appraisal Agricultural Survey</i>
<i>RS</i>	<i>Regional Supervisor</i>
<i>RSM</i>	<i>Regional Statistical Manager</i>
<i>SAC</i>	<i>Scotts Agriculture Consultancy Ltd</i>
<i>SPSS</i>	<i>Statistical Package for Social Science</i>
<i>SRS</i>	<i>Short Rainy Season</i>
<i>TOT</i>	<i>Training of Trainers</i>
<i>ULG</i>	<i>Ultek Laurence Gould</i>
<i>UNDP</i>	<i>United Nations Development Programme</i>
<i>UNFAO</i>	<i>United Nations Food and Agriculture Organization</i>
<i>VPO</i>	<i>Vice President Office</i>

PREFACE

At the end of the 2002/03 Agriculture Year, the National Bureau of Statistics and the Office of the Chief Government Statistician in Zanzibar in collaboration with the Ministries of Agriculture and Food Security; Water and Livestock Development; Cooperatives and Marketing as well as the Presidents Office, Regional Administration and Local Government (PORALG) conducted the Agriculture Sample Census. This is the third Agriculture Census to be carried out in Tanzania, the first one was conducted in 1971/72, the second in 1993/94 and 1994/95 (during 1993/94 data on household characteristics and livestock count were collected and data on crop area and production in 1994/95).

It is considered that this census is one of the largest to be carried out in Africa and indeed in many other countries of the world. The census collected detailed data on crop production, crop marketing, crop storage, livestock production, fish farming, tree farming, access to infrastructures and services and poverty indicators.

In addition to this, the census was large in its coverage as it provides data that can be disaggregated at district level and thus allow comparisons with the 1998/99 District Integrated Agricultural Survey. The census covered smallholders in rural areas only and large scale farms. This report presents Kigoma region data disaggregated to district level. It was very difficult to discuss all variables collected in a single report hence the analysis was based on the most important smallholder variables. The rest of the variables are found in the e attached annex of table of results. The analysis in the report includes time series comparisons using data from the previous censuses and surveys.

The extensive nature of the census in relation to its scope and coverage is a result of the increasing demand for more detailed information to assist in the proper planning of this sector and in the administrative decentralization of planning to district level. It is hoped that this report will provide new insights for planners, policy makers, researchers and others involved in the agricultural sector in order to improve the prevailing conditions faced by crop producers and livestock keepers in the country.

On behalf of the Government of Tanzania, I wish to express my appreciation for the financial support provided by the development partners, in particular, the European Union as well as DFID, UNDP, Japanese Government, JICA and others who contributed through the pool fund mechanism.

Finally, my appreciation goes to all those who in one-way or the other contributed to the success of the survey. In particular, I would also like to mention the enormous effort made by the Planning Group composed of professionals from the Agriculture Statistics Department of the National Bureau of Statistics (NBS), the Office of the Chief Government Statistician in Zanzibar (OCGS) and the Statistics Unit of the Ministry of Agriculture and Food Security (MAFS) with technical assistance provided by Ultec Lawrence Gould (ULG), Scotts Agriculture Consultancy Ltd and the Food and Agriculture Organisation of the United Nations (FAO).

Additionally, I would like to extend my appreciation to all professional staff of the National Bureau of Statistics, the sector Ministries of Agriculture and PORALG, the Consultants as well as Regional and District Supervisors and field enumerators for their commendable work. Certainly without their dedication, the census would not have been such a success.

Albina A. Chuwa
The Director General
National Bureau of Statistics

EXECUTIVE SUMMARY

The executive summary highlights the main survey results obtained during the National Sample Census of Agriculture 2002/03. This report covers small-scale agriculture households in rural areas of Kigoma region who were selected using statistical sampling techniques. The results presented in this report do not cover urban areas and large-scale farmers.

Highlighted are important findings regarding agricultural production, productivity, husbandry, access to resources, levels of involvement in agricultural and related activities and poverty in Kigoma region, the aim being to present an overview, at regional level, of the rural agricultural households and their levels of involvement in agricultural activities.

i) Household Characteristics

The number of agricultural households in Kilimanjaro region was 216,173 out of which 57,719 (26.7%) were involved in growing crops only, 1,951 (0.9%) rearing livestock only, 35 (0.1%) were pastoralist and 156,467 (72.4%) were involved in crop production as well as livestock keeping.

Most of the agricultural households ranked annual crop farming as an activity that provided most of their cash income followed by permanent crop farming, livestock keeping/herding, off farm income, tree/forest resources, remittances, fishing hunting & gathering.

Kilimanjaro region had a total literacy rate of 86.7 percent, the highest literacy rate was found in Mwanga district (87.7%) followed by Moshi rural district (89.3%), Rombo (85.3%), Same and Hai districts both had (84.8%), thus Same and Hai district had the lowest literacy rates.

The number of heads of agricultural households with formal education in Kilimanjaro region was 185,978 (86.0%), those without formal education were 28,714 (13.3%) and those with only adult education were 1,451 (0.7% percent). The majority of heads of agricultural households (73.4) percent had primary level education whereas only 3.9 percent had post primary education.

In Kilimanjaro region 76,886 households (65.3% of households with off-farm income) had each one household member engaged in off-farm income generating activities. Another 38,977 households (27.6%) had two household members engaged in off farm income generating activities and 22,999 households (15.7%) had each more than two members engaged in off-farm income generating activities.

ii) Crop Production

Land Area

The total area of land available to smallholders was 276,325 ha. The regional average land area utilised for crop production per crop growing household was only 1.3 ha. This figure was below the national average of 2.0 hectares

- **Planted Area**

The area planted with annual crops and vegetables was 174,253 hectares out of which 104,994 hectares (60%) were planted during long rainy season and 69,259 hectares (40%) during short rainy season.

An estimated area of 63,594 ha (60.6% of the total planted area with annual and vegetable crops) was planted with cereals, followed by 28,590 hectares (27.2%) of pulses, 5,545 ha (5.3%) of root & tubers, 5,358 ha (5.1 percent) of oil seeds and oil nuts, 11,887 ha (1.7%) of fruits & vegetables and 22 ha (0.02%) of cash crops.

- **Maize**

Maize was the dominant annual crop grown in Kilimanjaro region and it had a planted area 2.2 times greater than beans, which had the second largest planted area. The areas planted with maize constitute 55 percent of the total area planted with annual crops. Other crops in order of their importance (based on area planted) were beans, sunflower, cassava, finger millet, groundnuts, paddy, tomatoes cocoyams and sweet potatoes.

- **Beans**

Beans dominated the production of pulse crops in the region. The number of households growing beans in Kilimanjaro region in the long and short rainy seasons was 103,410 and 73,082 respectively. The total production of beans in the region was 17,662 tonnes from a planted area of 77,486 hectares resulting in a yield of 0.4t/ha.

- **Cassava**

The area planted with cassava was larger than any other root and tuber crops, followed by Irish potatoes, cocoyams, sweet potatoes and yams. The number of households growing cassava in the region was 12,534. This represented about 2 percent of the total crop growing households in the region.

- **Fruit and Vegetables**

The total production of fruits and vegetables was 19,550 tonnes. The most cultivated fruit and vegetable crop was tomatoes with a production of 11,221 tonnes (57.4% of the total fruits and vegetables produced) followed by onion (2,751t, 14.1%), amaranth (1581t, 8.1%), cabbage (1,425t, 7.2%) production of the other fruits and vegetables crops was relatively small.

- **Permanent Crops**

The area of smallholders planted with permanent crops was 113,618 hectares (14% of the area planted with annual crops in the region). The most important permanent crop in Kilimanjaro region was banana which had a planted area of 56,038 ha, (54.7% of the planted area of all permanent crops) followed by coffee (35,633 ha, 34.8%), mango (8,045 ha, 7.8%). The remaining permanent crops collectively had a planted area of 2,801 ha (11.0%)

- **Improved Seeds**

The planted area using improved seeds was estimated at 73,097 ha which represented 43 percent of the total planted with the annual crops and vegetables area. The percentage use of improved seed in the long rainy season was 59.3 percent, and higher than the corresponding percentage uses for the short rainy season at 54.4 percent

- **Use of Fertilizers**

The use of fertilisers on annual crops is moderate with a planted area of 114,912 ha (65.9 of the total planted area in the region). Of the area planted with fertiliser application, farm yard manure was applied to 59,341 ha which represents 34 percent of the total planted area (65.9% of the area planted with fertiliser application in the region). This was followed by mostly Inorganic fertiliser (34,082 ha, 20%) and mostly compost 7,579 ha representing only 4 percent of the total planted area. The highest percentage of the area planted with fertilizer (all types) was in Hai district (83.3%) followed by Moshi Rural (70.9%), Mwanga (67.3%), Same (64.7%) and Rombo (48.5%).

- **Irrigation**

The area of annual crops under irrigation was 25,947 ha representing 15 percent of the total area planted (Chart 3.79). The area under irrigation during the long rainy season was 15,190 ha accounting for 59 percent of the total area under irrigation. In the short rainy season, 10,758 ha or 3.6 percent of the total area planted with crops was irrigated.

Crop Storage

There were 142,851 crop growing households (90% of the total crop growing households) that stored various agricultural products in the region.

The most important stored crop was maize with 131,869 households storing 39,418 tonnes as of 1st January 2004. This was followed by beans and pulses (84,190 households, 5,366t), paddy (15,765 households, 1,222t), sorghum and millets (7,920 households, 403t), groundnuts and bambaranuts (3,981 household, 123t) and coffee (1,487 household, 63t). Other crops were stored in very small amounts.

- **Crop Marketing**

The number of households that reported selling crops was 167,709 which represent 77.6 percent of the total number of crop growing households. The percent of crop growing households selling crops was highest in Rombo (89%) followed by Moshi Rural (84%), Hai (70%), same (64%) and Mwanga (62%).

- **Crop Extension Services**

The number of Agricultural households that received crop extension was 135,826 (63% of total crop growing households in the region). Some districts have more access to extension services than others, with Moshi Rural district having a relatively high proportion of households (73%) that received crop extension messages followed by Rombo (59%), Hai (58%), Same (53%) and Mwanga (54%).

- **Soil Erosion and Water Harvesting Facilities**

The number of agricultural households that had soil erosion and water harvesting facilities on their farms was 48,710 which represent 23 percent of the total number of agricultural households in the region. The proportion of households with soil erosion control and water harvesting facilities was highest in Moshi Rural district (36%) followed by Hai (31%), Same (25%), Mwanga (8%) and Rombo had none

- iii) **Livestock and Poultry Production**

- **Cattle**

The total number of cattle in the region was 494,555. Cattle are the dominant livestock type in the region followed by goats, sheep and pigs. The region had 3 percent of the total cattle population on Tanzania Mainland. The number of indigenous cattle in Kilimanjaro region was 351,191 (71 % of the total number of cattle in the 5,454 cattle (1%) were beef breeds

- **Goats**

The number of goat-rearing-households in Kilimanjaro region was 103,017 (65% of all agricultural households in the region) with a total of 572,577 goats giving an average of 6 head of goats per goat-rearing-household. Rombo had the largest number of goats (198,082 goats, 35% of all goats in the region), followed by Moshi Rural (168,107 goats, 29%), Hai (103,077 goats, 18%), same (55,561 goats, 10%) and Mwanga (47,751 goats, 8%).

- **Sheep**

Sheep rearing was the third important livestock keeping activity in Kilimanjaro region after cattle and goats. The region ranked 5 out of 21 Mainland regions and had 7 percent of all sheep on Tanzania Mainland.

- **Pigs**

Piggery is the least important livestock keeping activity in the region after cattle, goats and sheep. The region ranks 3rd out of 21 Mainland regions and is 14 percent of the Mainland total pigs.

- **Chicken**

The poultry sector in Kilimanjaro region was dominated by chicken production. The region contributed 5.0 percent to the total chicken population on Tanzania Mainland.

- **Use of Draft Power**

Use of draft animals to cultivate land in Kilimanjaro region is encouraging with 10,551 households (4.9% of the total households in the region). The number of households that used draft animals in Hai district was 7,710 (73% of the households using draft animals in the region). In Moshi Rural district the number of households using draft animals was 1,357 (13%), Mwanga (1,238 households, 12%), Same (142 households 1%) and Rombo (103 households, 1%).

iv) Poverty Indicators**▪ Availability of Toilets**

A large number of rural agricultural households use traditional pit latrines (194,950 households, 90% of all rural agricultural households). This is followed by flush toilets (5,538 households 3%), improved pit latrines (11,310 households, 5%) and other types of toilets (231 household, 0.1%). However, 4,143 households (2%) in the region had no toilet facilities

▪ Household Assets

Out of all assets, the radio was the most common household assets and was owned by 78% of the households, followed by iron (48%), bicycle (28%), wheelbarrow (21%), mobile phone (10%), television/video (4%), and vehicle (3%) and landline phone (2%).

▪ Source of Lighting Energy

Hurricane lamp was the most common source of lighting energy in the region. About 42.4 percent of the total rural households used this source of energy followed by wick lamp (38.6%), main electricity (12.4), and pressure lamp (6.0%), the remaining constitute less than (5%).

▪ Energy for Cooking

The most prevalent source of energy for cooking was firewood, which was used by 95.7 percent of all rural agricultural households. The second most common source of energy for cooking was charcoal (1.6 percent). The rest of energy sources accounted for 0.7 percent, the remaining constitute for 1.8 percent, these were crop residues (0.9 percent) and mains electricity (0.7), solar energy (0.5%), paraffin/kerosene oil (0.3%), bottle gas and biogas (0.1%)

▪ Roofing Materials

The most used roofing material (for the main dwelling) was iron sheet and was used by 89.7% of the rural agricultural households. It was followed by grass/leaves (7.6%). Other roofing materials were grass/mud (1.2 percent), asbestos and tiles both had (0.5 percent).

▪ Number of Meals per Day

About 61.7% of the households in the region took three meals per day, 33.8% took two meals, 4.1 percent took one meal and 0.5 percent took four meals

• Food Security

Households which never had problems in satisfying their food needs represented 55% of the total number of agricultural households in the region. Households which rarely experienced problems represented 30% whereas those with often problems represented 6 percent. About 5 percent of the agricultural households always faced food shortages whilst 4% seldom experienced food shortage problems.

▪ **Main Source of Cash Income**

Selling of food crops was the main cash income earning activity reported by 43.9% of all rural agricultural households. The second main cash income earning activity was selling of cash crops (15.9 percent), cash and remittance (11.3), wages and salaries (10.9%), businesses income (9.9 percent), sales of livestock (2.7%), sale of livestock product (1.4 percent), sale of forest products (1.4 percent) and fishing (0.2%).

ILLUSTRATIONS**List of Tables**

2.1	Census Sample Size.....	6
3.1	The Livelihood Activities/Source of Income of the Households Raked in Order of Importance by District	15
3.2	Area, Production and Yield of Cereal Crops by Season.....	25
3.3	Area Planted and Quantity Harvested by Season and Type of Root and Tuber Crop	31
3.4	Area, Quantity Harvested and Yield of Pulses by Season.....	34
3.5	Area, Quantity Harvested and Yield of Oil Seed Crops by Season.....	36
3.6	Area, Production and Yield of Fruits and Vegetables by Season	39
3.8	Land Clearing Methods	48
3.9	Number of Crop Growing Households and Planted Area (ha) by Type of Fertilizer Used and District during the Long Rainy Season	54
3.11	Number of Households Storing Crops by Estimated Storage Loss and District	66
3.12	Reasons for Not Selling Crop Produce	72
3.13	Access to Inputs.....	74
3.15	Total Number of Households and Chickens Raised by Flock Size	90
3.16	Head Number of Other Livestock by Type of Livestock and District.....	94
3.17	Mean Distances from Holders Dwellings to Infrastructures and Services by Districts.....	99
3.18	Number of Households by Number of Meals the Household Normally Has per Day and District.....	107

List of Charts

3.1	Percentage Distribution of Agricultural Households by Type of Holdings.....	11
3.2	Percentage Distribution of Agricultural Households by Sex of Household Head.....	15
3.3	Percentage Distribution of Population by Age and Sex in 2003	16
3.4	Percentage Literates Level by District.....	16
3.5	Literacy Rates of Heads of Household by Sex and District.....	17
3.6	Percentage of Person Aged 5 years and Above by District and Educational Status.....	17
3.7	Percentage Distribution of Persons Aged 5 Years and Above in Education Status and District.....	17
3.8	Percentage Distribution of Heads of Household by Educational Attainment.....	18
3.9	Number of Households by Number of Members with Off-farm Activities.....	18
3.10	Percentage Distribution of Agricultural Households by Number of Members with Off-farm Activities and District.....	18
3.11	Utilized and Usable Land per Household by District.....	20
3.12	Percentage Distribution of Land Area by Type of Land Use	20
3.13	Area Planted with Annual Crops (ha) by Season and District.....	23

3.14	Area Planted with Annual Crops per household by Season and District.....	23
3.15	Area Planted with Annual Crops per household and Vegetables by Season.....	23
3.16	Planted Area for the Main Annual Crops (ha).....	24
3.17	Planted Area (ha) per Household for Selected Crops.....	24
3.18	Percentage Distribution of Area Planted with Annual Crops by Crop Type.....	25
3.19	Area Planted with Annual Crops by Type of Crops and Season.....	25
3.20	Area Planted and Yield of Major Cereal Crops.....	27
3.21	Maize: Total Area Planted and Planted Area per Household by District.....	27
3.22	Maize Production Trend as per Agriculture Censuses and Surveys.....	27
3.23	Time Series of Maize Planted Area and yield.....	28
3.24	Total Area Planted and planted Areas Per Households By District.....	28
3.25	Time Series Data on Paddy Production.....	28
3.26	Time Series of Paddy Planted Area and Yield.....	29
3.27	Area planted with Sorghum, Finger Millet and Wheat by District.....	29
3.28	Area Planted and Yield of Major Root and Tuber Crops.....	29
3.29a	Area Planted with Cassava during the Census/Survey Years.....	31
3.29b	Percent of Cassava Planted Area and Percent of Total Land with Cassava by District.....	31
3.30	Cassava Planted Area per Cassava Growing Households by District.....	32
3.31	Sweet Potatoes: Total Area Planted and Planted Area per Household by District.....	32
3.32	Area Planted and Yield of Major Pulse Crops.....	34
3.33	Percent of Bean Planted Area and Percent of Total Land with Beans by District.....	35
3.34	Area Planted per Bean Growing Household by District (Long Rainy Season Only).....	35
3.35	Time Series Data on Bean Production.....	35
3.36	Time Series of Bean Planted Area and Yield.....	35
3.37	Area Planted and Yield of Major Oil Seed Crops.....	36
3.38	Time Series Data on Groundnuts Production.....	36
3.39	Percent of Groundnuts Planted Area and Percent of Total Land with Groundnuts by District.....	38
3.40	Area Planted per Groundnut Growing Household by District (Long Rainy Season Only).....	38
3.42	Area Planted and Yield of Fruits and Vegetables.....	38
3.43	Area Planted per Tomato Growing Household by District (Short Rainy Season Only).....	43
3.44	Percent of Cabbage Planted Area and Percent of Total Land with Cabbage by District.....	43
3.45	Percent of Chillies Planted Area and Percent of Total Land with Chillies by District.....	43
3.46	Area planted with Annual Cash Crops.....	44
3.47	Percent of Sunflower Planted Area and Percent of Total Land with Sunflower by District.....	44
3.48	Area Planted for Annual and Permanent Crops.....	45
3.49	Area Planted with the Main Permanent Crops.....	45
3.51	Percent of Area Planted with Permanent crops and Average Planted Area per Household by District.....	45
3.52	Percent of Area Planted with Coffee and Average Planted Area per Household by District.....	46

3.53	Percent of Area Planted with Oranges and Average Planted Area per Household by District.....	46
3.54	Percent of Area Planted with Bananas and Average Planted Area per Household by District	47
3.55	Percent of Area Planted with Guava and Average Planted Area per Household by District.....	47
3.56	Number of Households by Method of Land Clearing During the Long Rainy Season.....	48
3.57	Area Cultivated by Cultivation Method.....	48
3.58	Area Cultivated by Method of Cultivation and District.....	52
3.60	Area Planted with Improved Seed by Crop Type	52
3.59	Area Planted with Improved Seeds.....	52
3.61	Percentage of Crop Type Area Planted with Improved Seed – Annuals	53
3.62	Area of Fertilizer Application by Type of Fertilizer.....	53
3.63	Area of Fertilizer Application by Type of Fertilizer and District.....	53
3.64	Planted Area with Farm Yard Manure by Crop Type - Long Rainy Season	54
3.65a	Percentage of Crop Type Planted Area with Farm Yard Manure – Annuals	55
3.65b	Proportion of Planted Area Applied with Farm Yard Manure by District.....	55
3.66	Planted Area with Inorganic fertilizers by Crop Type	55
3.67a	Percentage of Planted Area with Inorganic Fertilizers by Crop Type– Annuals.....	55
3.67b	Proportion of Planted Area Applied with Inorganic Fertilizers by District.....	57
3.68a	Planted Area with Compost by Crop Type - Long Rainy Season	57
3.68b	Percentage of Planted Area with Compost by Crop Type	58
3.68c	Proportion of Planted Area Applied with Compost by District.....	58
3.69	Planted Area (ha) by Pesticide Use.....	58
3.70	Planted Area Applied with Insecticides by Crop Type.....	59
3.71	Percentage of Crop Type Planted Area Applied with Insecticides.....	59
3.72	Percentage of Planted Area Applied with Insecticides by District	59
3.73	Planted Area Applied with Herbicides by Crop Type	60
3.74	Percentage of Crop Type Planted Area Applied with Herbicides	60
3.75	Proportion of Planted Area Applied with Herbicides by District	60
3.76	Planted Area Applied with Fungicides by Crop Type.....	61
3.77	Percentage of Crop Type Planted Area applied with Fungicides	61
3.78	Proportion of Planted Area Applied with Fungicides by District	61
3.79	Area of Irrigated Land	62
3.80	Planted Area with Irrigation by District.....	62
3.81	Time Series OF Households with Irrigation.....	63
3.82	Number of Households with Irrigation by Source of Water.....	63
3.83	Number of Households by Method of Obtaining Irrigation Water.....	63
3.84	Number of Households and Quantity Stored by Crop	64
3.86	Number of Households by Storage Method	65
3.87	Number of Households by method of Storage and District (based on the most important household crop)	65

3.88	Normal Length of Storage for Selected Crops.....	65
3.89	Quantity of Maize Produced (tonnes), Stored and Percent Stored by District	66
3.90	Number of Households by Purpose of Storage and Crop	66
3.91	Households Processing Crops by District.....	67
3.92	Percent of Crop Processing Households by Method of Processing.....	67
3.93	Number of Households by Type of Main Processed Product.....	69
3.94	Number of Households by Type of By-product	69
3.95	Use of Processed Product	69
3.96	Percentage of Households Selling Processed Crops by District.....	70
3.97	Location of Sale of Processed Products.....	70
3.98	Percent of Households Selling Processed Products by Outlet and District	70
3.99	Number of Crop Growing Households that Sold Crops by District	70
3.100	Percentage Distribution of Households that Reported Marketing Problems by Type of Problem	71
3.101	Percentage Distribution of Households that Received Credit by Main Source	71
3.102	Proportion of Households who Received Credits by Main Source of the Credit	72
3.103	Proportion of Households Receiving credit by Main Purpose of the Credit	72
3.104	Reason for not Using Credit (%of Households).....	72
3.105	Number of Households Receiving Extension Advice	73
3.106	Number of Households Receiving Extension by District.....	73
3.107	Number of Households Receiving Extension message by Quality of Service	73
3.108	Number of Households Receiving Extension by Quality of Service.....	73
3.109	Number of Households Reporting Distance to Source of Inorganic Fertilizers	74
3.110	Number of Households by Source of Improved Seeds.....	76
3.111	Number of Households Reporting Distance to Source of Improved Seeds.....	77
3.112	Number of Households by Source of Insecticides/Fungicides	77
3.114	Number of Households reporting Distance to Source of Insecticides/Fungicides.....	78
3.115	Number of Households with Planted Trees	78
3.115	Number of Planted Trees by Species.....	78
3.116	Number of Trees Planted by Smallholders by Species and District	79
3.117	Number of Trees Planted by Location.....	79
3.118	Number of Households by Purpose of Planted Trees	79
3.119	Number of Households with Erosion Control/Water Harvesting Facilities	81
3.120	Number and Proportion of Households with Erosion Control/Water Harvesting Facilities by District.....	81
3.121	Number of Erosion Control/Water Harvesting Structures by Type of Facility	81
3.122	Total Number of Cattle ('000') by District.....	82
3.124	Numbers of Cattle by Type and District.....	82
3.126	Dairy Cattle Population Trend.....	83
3.126	Total Number of Goats ('000') by District.....	84

3.128	Goat Population Trend.....	85
3.129	Total Number of Sheep by District.....	85
3.130	Sheep Population Trend.....	85
3.131	Total Number of Pigs by District.....	88
3.132	Pig Population Trend.....	88
3.133	Total Number of Chicken by District.....	89
3.134	Chicken Population Trend.....	89
3.135	Layers Population Trend.....	90
3.136	Broilers Population Trend.....	90
3.137	Number of Improved Chicken by Breed Type and District.....	94
3.138	Proportion of Livestock Keeping Households that Reported Tsetse flies and Ticks Problems by District.....	94
3.139	Percent of Livestock Rearing Households that Dewormed Livestock by Livestock Type and District.....	95
3.140	Percentage Distribution of Livestock Rearing Households by Quality of Livestock Extension Services.....	95
3.141	Number of Households by distance to Verterinary clinic and district.....	97
3.142	Number of households by Distance to Village watering Points.....	97
3.143	Number of households by Distance to Village watering Points and District.....	97
3.144	Number of Household using Draft Ani,mal.....	98
3.145	Number of Household using Draft Ani,mal by District.....	98
3.146	Number of Household using Organic Fertilizer.....	98
3.147	Number of Household using Organic Fertilizer by District.....	99
3.148	Number of Household Practicing Fish Farming.....	99
3.151	Percentage Distribution of Households Owning the Assets.....	101
3.152	Percentage Distribution of Households by Main Source of Energy for Cooking.....	101
1.153	Percentage Distribution of Households by Main Source of Energy for cooking.....	102
1.154	Percentage Distribution of Households by Type of Roofing Material.....	102
1.155	Percentage Distribution of Households With iron sheet Roofs.....	102
3.160	Percentage Distribution of the Number of Households by Main Source of Income.....	108

List of Maps

3.1	Total Number of Agricultural Households by District.....	12
3.2	Number of Agricultural Households per Square Km of Land by District.....	12
3.3	Number of Crop Growing Households by District.....	13
3.4	Percent of Crop Growing Households by District.....	13
3.5	Number of Crop Growing Households per Square Kilometer of Land by District.....	14
3.6	Percent of Crop and Livestock Households by District.....	14
3.7	Utilized Land Area Expressed as a Percent of Available Land.....	21

3.8	Total Planted Area (annual crops) by District	21
3.9	Area planted and Percentage during the Short Rainy Season by District.....	22
3.10	Area Planted with Cereals and Percent of Total Land Planted with Cereals by District.....	22
3.11	Planted Area and Yield of Maize by District.....	26
3.12	Area Planted per Maize Growing Household	26
3.15	Planted Area and Yield of Cassava by District.....	30
3.16	Area Planted per Cassava Growing Household.....	30
3.17	Planted Area and Yield of Beans by District.....	33
3.18	Area Planted per Beans Growing Household	33
3.19	Planted Area and Yield of Sunflower by District	40
3.20	Area Planted per Sunflower Growing Household	40
3.21	Area Planted per Tomatoes Growing Household	41
3.22	Planted Area and Yield of Tomatoes by District.....	41
3.23	Area Planted per Banana Growing Household	42
3.24	Planted Area and Yield of Banana by District.....	42
3.26	Area Planted per Coffee Growing Household	49
3.27	Planted Area and Yield of Coffee by District.....	49
3.29	Area Planted per Mangoes Growing Household	50
3.30	Planted Area and Yield of Mangoes by District	50
3.31	Area Planted per Avocado Growing Household.....	51
3.32	Planted Area and Yield of Avocado by District	51
3.33	Planted Area and Percent of Planted Area with No Application of Fertilizer by District	56
3.34	Area Planted and Percent of Total Planted Area with Irrigation by District	56
3.35	Percent of Households Storing Crops for 3 to 6 Months by District.....	68
3.36	Number of Households and Percent of Total Households Selling Crops by District.....	68
3.37	Number of Households and Percent of Total Households Receiving Crop Extension Services by District.....	75
3.38	Number and Percent of Crop growing Household Using improved seed by District.....	75
3.39	Number and Percent of Smallholder Planted Tree by District	80
3.40	Number and percent of Households with water Harvesting Bunds.....	80
3.41	Cattle population by District as of 1st Octobers 2003	86
3.42	Cattle Density by District as of 1st October 2003	86
3.43	Goat population by District as of 1st Octobers 2003.....	87
3.44	Goat Density by District as of 1st October 2003	87
3.45	Sheep population by District as of 1st Octobers 2003.....	91
3.46	Sheep Density by District as of 1st October 2003	91
3.47	Pig population by District as of 1st Octobers 2003	92
3.48	Pig Density by District as of 1st October 2003	92
3.49	Number of Chicken by District as of 1st October 2003.....	93

3.50	Density of Chicken by District as of 1st October 2003	93
3.51	Number and percent of households Infected by Ticks.....	96
3.52	Number and percent of households Using Draft Animals byDistrict	96
3.53	Planted Area and Percent of Planted Area with FarmYard manure Application.....	100
3.54	Planted Area and Percent of Planted Area With Composit Application by District	100
3.55	Number and Percent of Households Practicing Fish Farming.....	103
3.56	Number and Percent of Households Without Toilets	103
3.57	Number and Percent of Households Using Grass/Leaves as Roofing Material	104
3.58	Number and Percent of Households Eating 3 Meals per Day	104
3.59	Number and Percent of Households Eating Once Meat per week.....	105
3.60	Number and Percent of Households Eating Fish once per week	105

1. BACKGROUND INFORMATION

1.1 Introduction

This part of the report presents a brief description of the region by providing information on its geographical location, land area, climate, administrative set up, population and socio-economic indicators. The information is intended to provide the user of this report a general understanding of the region and its resources.

1.2 Geographical Location and Boundaries

The region is located in the north eastern part of Tanzania Mainland. It lies, south of the equator between latitude $2^{\circ} 25'$ and $4^{\circ} 25' 3''$ and $38^{\circ} 18'' 00''$ east of Greenwich. It has a common boarder with Kenya in the north. To the southeast it shares its boarder with Tanga region. To the south and west the region boarders Arusha region.

1.3 Land Area

The region has an area of 13,209 sq. kilometers, or 1.4% of the area of the entire Tanzania Mainland.

1.4 Climate

In the mountainous areas, temperature ranges from about 15°c - 30°c . The soils of the region vary but are dominated by alluvial soils in the lowland areas which through irrigation have high agricultural potential. This is a blessing since the lowlands have unreliable rainfall. In the highlands the soils being of volcanic origin are very fertile. Mount Kilimanjaro's rain shadow dramatically reduces rainfall.

1.4.1 Rainfall

Kilimanjaro region has two types of rain seasons namely: Long rainfall season (Masika) which starts from April to Mid June and Short rainfall season, (Vuli) which starts from September to November, mean annual rainfall 500 mm in lowlands and 2000 mm in the highland zone.

1.5 Population

Kilimanjaro had a population of 1,376; 702 sq. kilometers according to the 2002 population census represent 4.1% of total population of Tanzania Mainland

1.6 Socio - Economic Indicators

The regional Gross Domestic Product (GDP) at current prices for the year 2003 was estimated to be TShs 427,374 million with a per capita income of shillings 306,299 . The region held 9th position among regions on GDP and contributed about 4.4 percent to the national GDP.

Kilimanjaro region is one of the regions that is endowed with richness in terms of wildlife. The region has got several tourist attractions including the Kilimanjaro National Park, which is the home for the high altitude wildlife and a variety of insects and game reserves such as the Mkomazi Game reserve. Another

important tourist and game reserve such as the Mkomazi Game reserve. Another important tourist attraction is the highest mountain in Africa, which is second to Mount Everest.

2 INTRODUCTION

This part of the report provides the technical and operational description of the National Sample Census of Agriculture (NSCA), carried out in the rural areas of Tanzania Mainland and Zanzibar during the 2002/03 agricultural year. It details the background and the rationale for carrying out the NSCA in 2002/03 agricultural year. It also explains the sampling procedures, designing and implementation of the data processing system.

2.1 The Rationale for Conducting the National Sample Census of Agriculture

In 2003, the Government of Tanzania launched the Agricultural Sample Census as an important part of the Poverty Monitoring Master Plan which supports the production of statistics for advocacy of effective public policy, including poverty reduction, access to services, gender, as well as the standard crop production data normally collected in an agriculture census. The census is intended to fill the information gap and support planning and policy formulation by high level decision making bodies. It is also meant to provide critical benchmark data for monitoring Agriculture Sector Development Programme (ASDP) and other agriculture and rural development programs as well as prioritising specific interventions of most agriculture and rural development programs.

Following the decentralisation of the Government's administration and planning functions, there has been a pressing need for agriculture and rural development data disaggregated at regional and district levels. The provision of district level estimates will provide essential baseline information on the state of agriculture and support decision making by the Local Government Authorities in the design of District Agricultural Development and Investment Projects (DADIPS). The increase in investment is an essential element in the national strategy for growth and reduction of poverty.

This report (Volume V) is among the 21 regional reports for the mainland. Other Census reports include the Technical Report (Volume I), crop sector at national and regional levels including Zanzibar estimates (Volume II), Livestock Report (Volume III), Smallholder Household Characteristics and Access to Natural Resources Report (Volume IV), 21 Regional Reports for the Mainland (Volume V), Large Scale Farms Report (Volume VI) and a separate report for Zanzibar (Volume VII). In order to address the specific issue of gender, a separate thematic report on gender has been published. Other thematic reports will be produced depending on the demand and availability of funds. In addition to these reports two dissemination applications have been produced to allow users to create their own tabulations, charts and maps.

The report is divided into five main sections: Background Information, Introduction, Results, Evaluation and Conclusion and Appendices. The definitions relating to all aspects of this report can be found in the questionnaire (Appendix III).

2.2 Census Objectives

The 2003 Agriculture Sample Census was designed to meet the data needs of a wide range of users down to district level including policy makers at local, regional and national levels, rural development agencies, funding institutions, researchers, Non government Organisations (NGOs), farmer organisations, etc. As a result, the dataset is both more numerous in its sample and detailed in its scope compared to previous censuses and surveys. To date this is the most detailed Agricultural Census carried out in Africa. The census was carried out in order to:

Identify structural changes if any, in the size of farm household holdings, crop and livestock production, farm input and implement use. It also seeks to determine if there are any improvements in rural infrastructure and in the level of agriculture household living conditions;

Provide benchmark data on productivity, production and agricultural practices in relation to policies and interventions promoted by the Ministry of Agriculture and Food Security and other stake holders.

Establish baseline data for the measurement of the impact of high level objectives of the Agriculture Sector Development Programme (ASDP), National Strategy for Growth and Reduction of Poverty (NSGRP) and other rural development programs and projects.

Obtain benchmark data that will be used to address specific issues such as: food security, rural poverty, gender, agro-processing, marketing, service delivery, etc.

2.3 Census Coverage and Scope

The census was conducted for both large and small scale farms. The National Sample Census of Agriculture covered a total of 3,221 selected rural villages of Tanzania Mainland out of which 215 villages were from Kigoma region.

The census covered agriculture in detail as well as many other aspects of rural development and was conducted using three types of questionnaires:

Small scale farm questionnaire

Community level questionnaire

Large scale farm questionnaire

The small scale farm questionnaire was the main census instrument and it includes questions related to crop and livestock production and practices; population demographics; access to services, resources and infrastructure; issues on poverty, gender and subsistence versus profit making production units. The main sections covered are as follows:

Identification (i.e. region, district, ward and village)

Household and holding characteristics

Household information

Land ownership/tenure

Land use

Access and use of resources

Crop and vegetable production

Agro processing and by-Products

Crop storage and marketing

On-farm investment

Access to farm inputs and implements

Use of credit for agricultural purposes

Tree farming/agro-forestry

Crop extension services

Livelihood constraints

Animal contribution to crop production

Livestock

Livestock products

Fish farming

Livestock extension

Labour use

Access to infrastructure and other services

Household facilities

The community level questionnaire was designed to collect village level data such as access and use of common resources, community tree plantation and seasonal farm gate prices.

The large scale farm questionnaire was administered to large scale farms that were either privately or corporately managed. There will be a national report on large scale farming on Tanzania Mainland.

2.4 Legal Authority of the National Sample Census of Agriculture

The NSCA 2002/03 was conducted under the legal authority of the 2000 National Bureau of Statistics Act which, among other things, makes data collected from individuals strictly confidential and to be used for statistical purposes only.

2.5 Reference Period

Two types of reference periods were used namely the agricultural year and the reference date for livestock enumeration. The agricultural year 2002/03 (that is October 2002 to September 2003) was used for the data

items that are related to crop production. The reference date of enumeration for livestock and poultry count was 1st October 2003.

2.6 Census Methodology

The main focus at all stages of the census execution was on data quality and this is emphasised in this section. The main activities undertaken include:

- Census organisation
- Tabulation plan preparation

Sample design

Design of census questionnaires and other instruments.

Field pretesting of the census instruments

Training of trainers, supervisors and enumerators

Information Education and Communication (IEC) campaign

Data Collection

Field supervision and consistency checks

Data processing:

- Scanning
- ICR extraction of data
- Structure formatting application
- Batch validation application
- Manual data entry application
- Tabulation preparation using SPSS
- Table formatting and charts using Excel, map generation using Arc View and Freehand.
- Report preparation using Word and Excel.

2.6.1 Census Organization

The Census was conducted by the National Bureau of Statistics in collaboration with the sector ministries of agriculture, and the Office of the Chief Government Statistician in Zanzibar. At the national level the Census was headed by the Director General of the National Bureau of Statistics with assistance from the Director of Economic Statistics. The Planning Group, made up of staff from the National Bureau of Statistics, Department of Agricultural Statistics and three representatives from the Ministry of Agriculture and Food Security (Department of Policy and Planning), oversaw the overall operational aspects of the Census. At the regional level, implementation of census activities was overseen by the Regional Statistical Officer of NBS and the Regional Agriculture Supervisor from the Ministry of Agriculture and Food Security. At the District level, two supervisors from the President's Office, Regional Administration and Local Government (PORALG), managed the enumerators who also came from the same ministry.

Members of the Planning Group had a minimum qualification of a bachelor degree; the regional supervisors were agricultural economists, statisticians or statistical officers. The district supervisors and enumerators had diploma level qualifications in agriculture.

The Census and Surveys Technical Working Group provided support in sourcing financing, approving budget allocations and technical assistance inputs as well as monitoring the progress of the census. A Technical Committee for the census was established with members from key stakeholder organisations (i.e. NBS, sector ministries of agriculture, President's Office, Planning and Privatization (POPP), PORALG, University of Dar es Salaam (UDSM), Tanzania Food and Nutrition Centre (TFNC) and the Office of Chief Government Statistician (OCGS) in Zanzibar). The main function of the committee was to approve the proposed instruments and procedures developed by the Planning Group. It also approved the tabulations and analytical reports prepared from the Census data.

2.6.2 Tabulation Plan

The tabulation plan was developed following three user group workshops and thus reflects the information needs of the end users. It took into consideration the tabulations from previous census and surveys to allow trend analysis and comparisons.

2.6.3 Sample Design

The Mainland sample consisted of 3,221 villages. These villages were drawn from the National Master Sample (NMS) developed by the National Bureau of Statistics (NBS) to serve as a national framework for the conduct of household based surveys in the country. The National Master Sample was developed from the 2002 Population and Housing Census. In most cases, within each selected village, data was collected from a sub-sample of fifteen agricultural households. In few large villages thirty households were selected. The total Mainland sample was 48,315 agricultural households. In Zanzibar a total of 317 EAs were selected and 4,755 agricultural households were covered. Nationwide, all regions and districts were sampled with the exception of three urban districts (two from Mainland and one from Zanzibar).

In both Mainland and Zanzibar a stratified two stage sample was used. In the first stage, villages/enumeration areas (EAs) were selected with probability proportional to the number of villages in each district. In the second stage, 15 households were selected from a list of farming households in each Village/EA using systematic random sampling. Table 2.1 gives the sample size of households, villages and districts for Tanzania Mainland and Zanzibar.

Table 2.1: Census Sample Size

Number of	Mainland	Zanzibar	Total
Households	48,315	4,755	53,070
Villages/Eas	3,221	317	3,539
Districts	117	9	126
Regions	21	5	26

2.6.4 Questionnaire Design and Other Census Instruments

The census questionnaires were designed following user/producer meetings to ensure that the information collected was in line with their data needs. Several features were incorporated into the design of the questionnaire to increase the accuracy of the data:

Where feasible all variables were extensively coded to reduce post enumeration coding error.

The definitions for each section were printed on the opposite page so that the enumerator could easily refer to the instructions whilst interviewing the farmer.

The responses to all questions were placed in boxes printed on the questionnaire, with one box per character.

This feature made it possible to use scanning and ICR technologies for data entry.

Skip patterns were used to avoid asking unnecessary questions

Each section was clearly numbered, which facilitated the use of skip patterns and provided a reference for data type coding for the programming of CSpPro, SPSS and the dissemination applications.

Besides the questionnaires, there were other instruments used:

Village listing forms that were used for listing households in the villages and from this list a systematic sample of 15 agricultural households were selected from each village.

Training manual which was used by the trainers for the cascade/pyramid training of supervisors and enumerators. This manual was trainers guiding document on the procedures to follow during than training

Enumerator Instruction Manual which was used as reference material.

2.6.5 Field Pre-Testing of the Census Instruments

The Questionnaire was pre-tested in five locations (Arusha, Dodoma,,Kigoma, Unguja and Pemba). This was done purposely to test the wording, flow and relevance of the questions and to finalise crop lists, questionnaire coding and manuals. In addition to this, several data collection methodologies had to be finalised, namely, livestock numbers in pastoralist communities, cut flower production, mixed cropping, use of percentages in the questionnaire and finalising skip patterns and documenting consistency checks.

2.6.6 Training of Trainers, Supervisors and Enumerators

Cascade/pyramid training techniques were employed to maintain statistical standards. The top level training was provided to 66 national and regional supervisors (3 per region plus Zanzibar). The trainers were members of the Planning Group and the trainees were from the National Bureau of Statistics and the sector ministries of agriculture. The second level training was for the district supervisors and enumerators. This training was conducted in the regions. In each region three training sessions were conducted for the district supervisors and enumerators. In addition to training in field level Census methodology and definitions, emphasis was placed on training the enumerators and supervisors in consistency checking. Tests were given to the enumerators and supervisors and the best 50 percent of the trainees were selected to administer the smallholder and community level questionnaires. This increased the number of interviews per enumerator but it also released finance to increase the number of supervisors and hence the Supervisor Enumerator Ratio. The household listing exercise was carried out by all trained enumerators.

2.6.7 Information, Education and Communication (IEC) Campaign

Information, Education and Communication (IEC) is an important aspect of any census/survey undertaking. This is due to the fact that inadequately informed and hence uncooperative citizens may jeopardize the entire census/survey. As far as the 2002/03 Agricultural Sample Census was concerned, the main objective of the IEC program was to sensitize and mobilize Tanzanians to support, cooperate and participate in the census exercise.

Radio, television, newspapers, leaflets, t-shirts and caps were used to publicise the Sample Census. T-shirts and caps were used by the field staff and the village chairmen as official uniforms during the field work. The village chairmen helped to locate the selected households.

2.6.8 Household Listing

The household listing exercise was done in seven days. During the listing exercise, forms ACLF1 and ACLF2 were administered. The information collected included the number of fields operated by the household, the number of different types of livestock and poultry. This information was used to determine the agricultural households. From the list of agricultural households, 15 households were selected for the interview. The selection was done using the Random Number Table.

2.6.9 Data Collection

Data collection activities for the 2002/2003 Agricultural Sample Census took three months from January to March 2004. The data collection methods used during the census were by interview and no physical measurements, e.g., crop cutting and field area measurement were taken. Field work was monitored by a hierarchical system of supervisors at the top of which was the Mobile Response Team followed by the national, regional, and district supervisors.

The Mobile Response Team consisted of three principal supervisors who provided overall direction to the field operation and responded to queries arising outside the scope of the training exercise. The mobile response team consisted of the Manager of Agriculture Statistics Department, Long-term Consultant and Desk Officer for the Census. Decisions made on definitions and procedures were then communicated back to all enumerators via the national, regional and district supervisors.

District supervision and enumeration were done by staff from the President's Office, Regional Administration and Local Government (PORALG). National and regional supervisions were provided by senior staff of the National Bureau of Statistics and the sector ministries of agriculture. During the household listing exercise 3,221 extension staff were used. For the enumeration of the small holder questionnaire, 1,611 enumerators were used and additional 5 percent enumerators were held in reserve in case of drop outs during the enumeration exercise.

2.6.10 Field Supervision and Consistency Checks

Enumerators were trained to probe the respondents until they were satisfied with the responses given before they recorded them in the questionnaire. The first check of the questionnaires was done by enumerators in the field during enumeration. The second check was done by the district supervisors followed by regional and national supervisors. Supervisory visits at all levels of supervision focused on consistency checking of the questionnaires. Inconsistencies encountered were corrected, and where necessary a return visit to the respondent was made by the enumerator to obtain the correct information. Further quality control checks were made through a major post enumeration checking exercise where all questionnaires were checked for consistencies by all supervisors in the district offices.

2.6.11 Data Processing

Data processing consisted of the following processes:

Manual editing

Data entry

Data structure formatting

Batch validation

Tabulation

Illustration production

Report formatting

Manual Editing

Prior to scanning, all questionnaires underwent a manual cleaning exercise. This involved checking that the questionnaire had a full set of pages, correct identification and good handwriting. A score was given to each questionnaire based on the legibility and the completeness of enumeration. This score will be used to assess the quality of enumeration and supervision in order to select the best field staff for future censuses/surveys.

Data entry/Scanning and ICR Extraction Technologies

Scanning and ICR data capture technology was used for the small holder questionnaire. This not only increased the speed of data entry, it also increased the accuracy due to the reduction in keystroke errors. Interactive validation routines were incorporated into the ICR software to track errors during the verification process. The scanning operation was so successful that it is highly recommended that this technology be adopted for future censuses/surveys.

The Census and Surveys Processing Program (CSPPro) was used to enter 2,880 of small holder questionnaires that were rejected by the Intelligent Character Recognition (ICR) extraction application.

Data Structure Formatting

A program was developed in visual basic to automatically alter the structure of the output from the scanning/extraction process in order to harmonise it with the manually entered data. The program automatically checked and changed the number of digits for each variable, the record type code, the number

of questionnaires in the village, the consistency of the Village Identification (ID) code and saved the data of one village in a file named after the village code.

Batch Validation

A batch validation program was developed in order to identify inconsistencies within a questionnaire. This is in addition to the interactive validation during the ICR extraction process. The procedures varied from simple range checking within each variable to more complex checking between variables. It took six months to screen, edit and validate the data from the smallholder questionnaire. After the long process of data cleaning, the results were prepared based on a pre-designed tabulation plan.

Tabulations

Statistical Package for Social Sciences (SPSS) was used to produce the Census results and Microsoft Excel was used to organize the tables and compute additional indicators.

Analysis and Report Preparation

The analysis in this report focuses on regional and district production estimates, districts comparisons and time series analysis. Microsoft Excel was used to produce charts; whereas Microsoft Word was used to compile the report.

Data quality

A great deal of emphasis was placed on data quality throughout the whole exercise from planning, questionnaire design, training, supervision, data entry, validation and cleaning/editing. As a result of this NBS believes that the Census is highly accurate and representative of what was experienced at field level during the Census year. With very few exceptions the variables in the questionnaire are within the norms for Tanzania and they follow expected time series trends when compared to historical data. Standard Errors and Coefficients of Variation for the main variables can be found in the Technical Report (Volume I).

2.7 Funding Arrangements

The Agricultural Sample Census was supported mainly by the European Union (EU) who financed most of the operational activities. Other funds for operational activities came from the Government of Tanzania, Government of Japan, United Nations Development Programme (UNDP) and other partners in the Pool Fund of the Vice President's Office (VPO). In addition to this, technical assistance was provided by the European Union (EU), Department for International Development (DFID) and Japanese International Cooperation Agency (JICA). Technical assistances were managed by Ultek Laurence Gould Consultants (ULG), Scotts Agriculture Consultancy Ltd (SAC) and the Food and Agriculture Organisation (FAO).

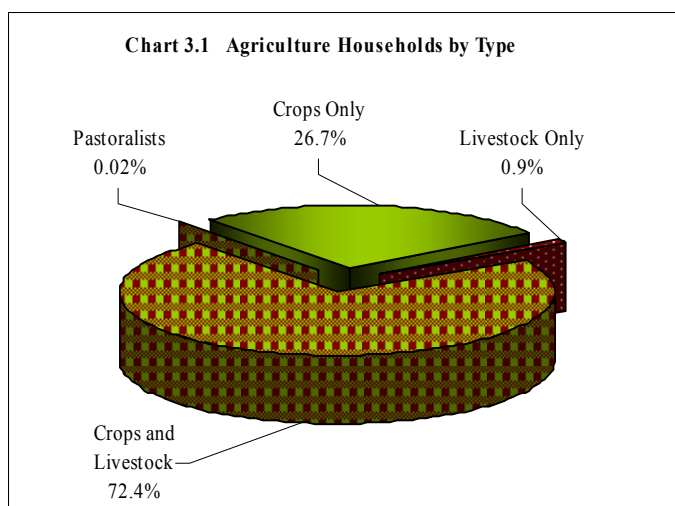
3. CENSUS RESULTS

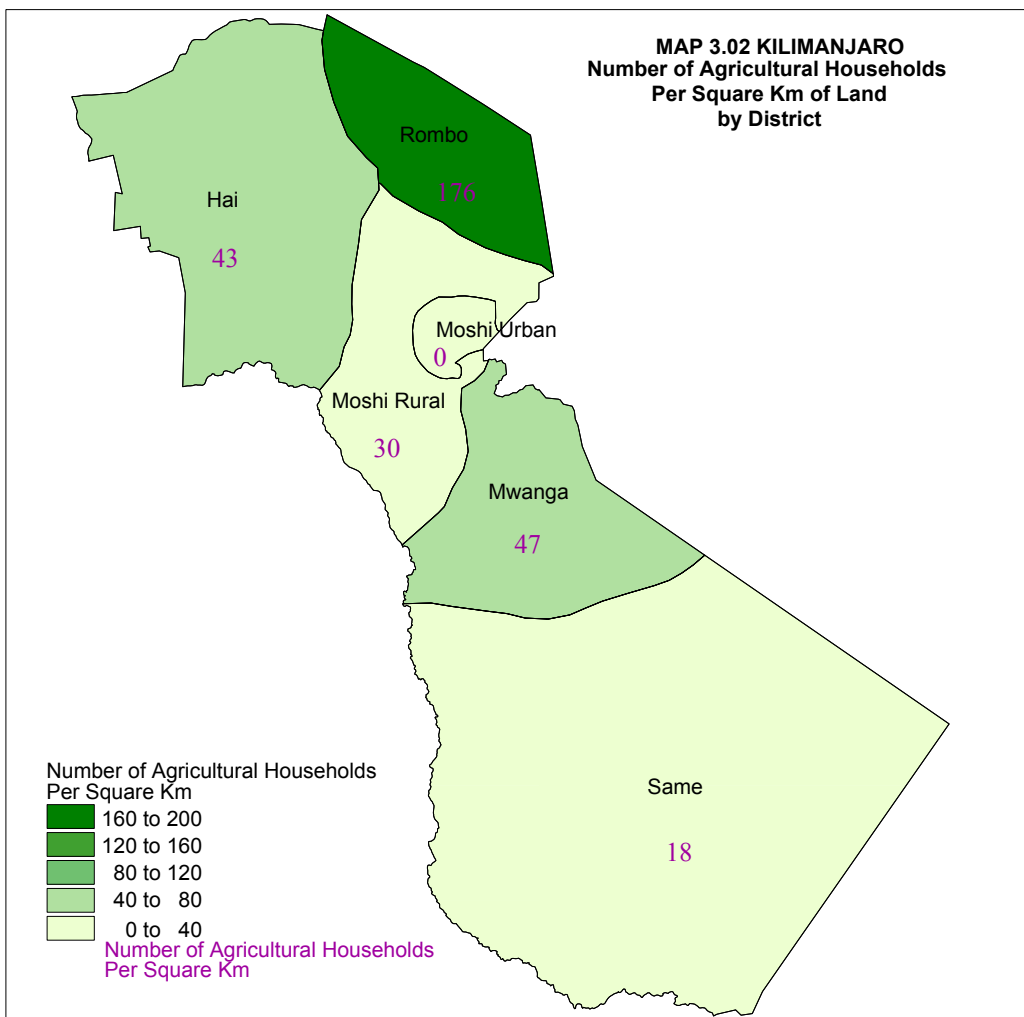
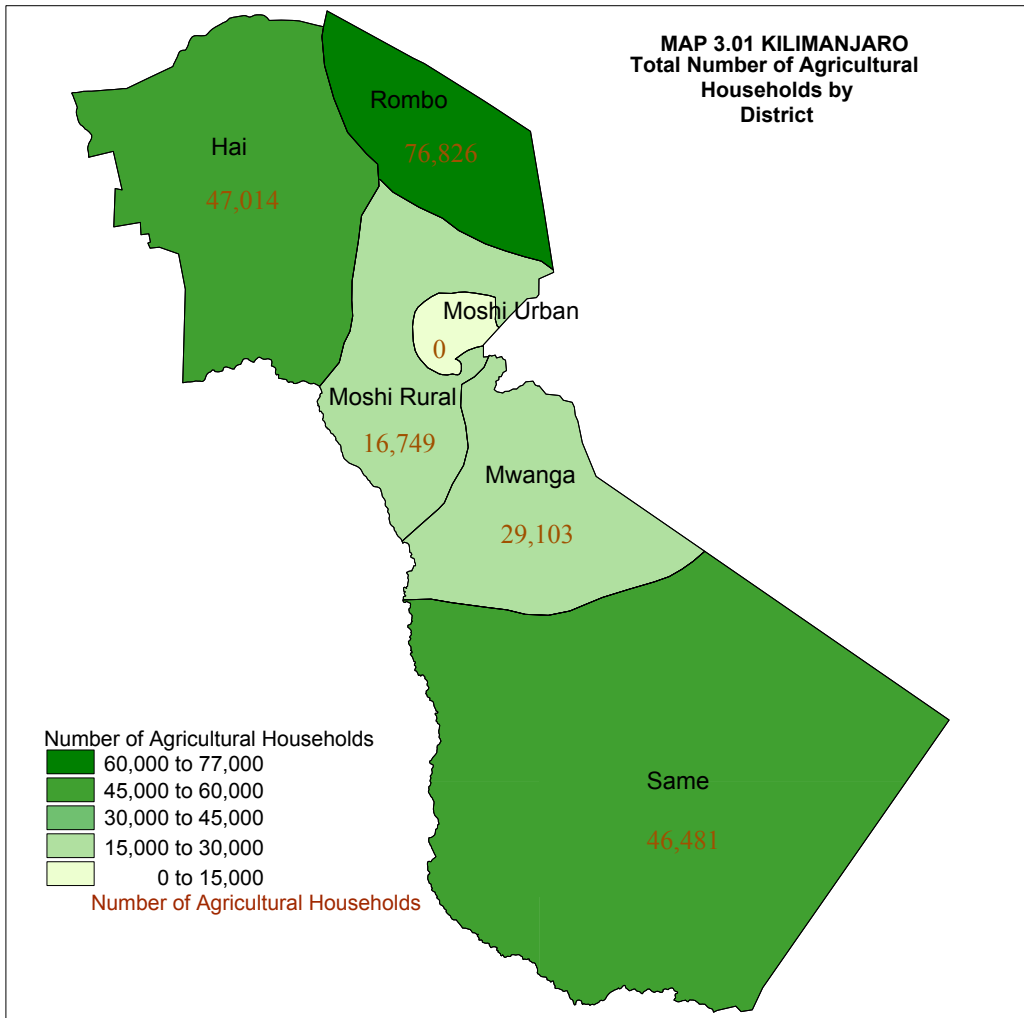
This part of the report presents the census results for Kilimanjaro region, based on the statistical data tables presented in Appendix A2. The results are presented in different forms including brief summaries, charts, condensed tables and graphs and maps in order to make it easier for the users to understand. Comparisons are made between related variables and between districts. Comparisons are also made with past censuses/surveys results such as the 1994/95 National Sample Census of Agriculture (NSCA), the 1995/96 and the 1996/97 Expanded Agricultural Surveys, the 1997/98 Integrated Agricultural Surveys, the 1998/99 District Integrated Agricultural Survey and the 1999/00 Rapid Agricultural Appraisal Survey. The results are divided into four main sections which are household characteristics, crop results, livestock results and poverty indicators. Compared to previous censuses and surveys, more effort has been placed in analyzing the results in order to formulate solid conclusions.

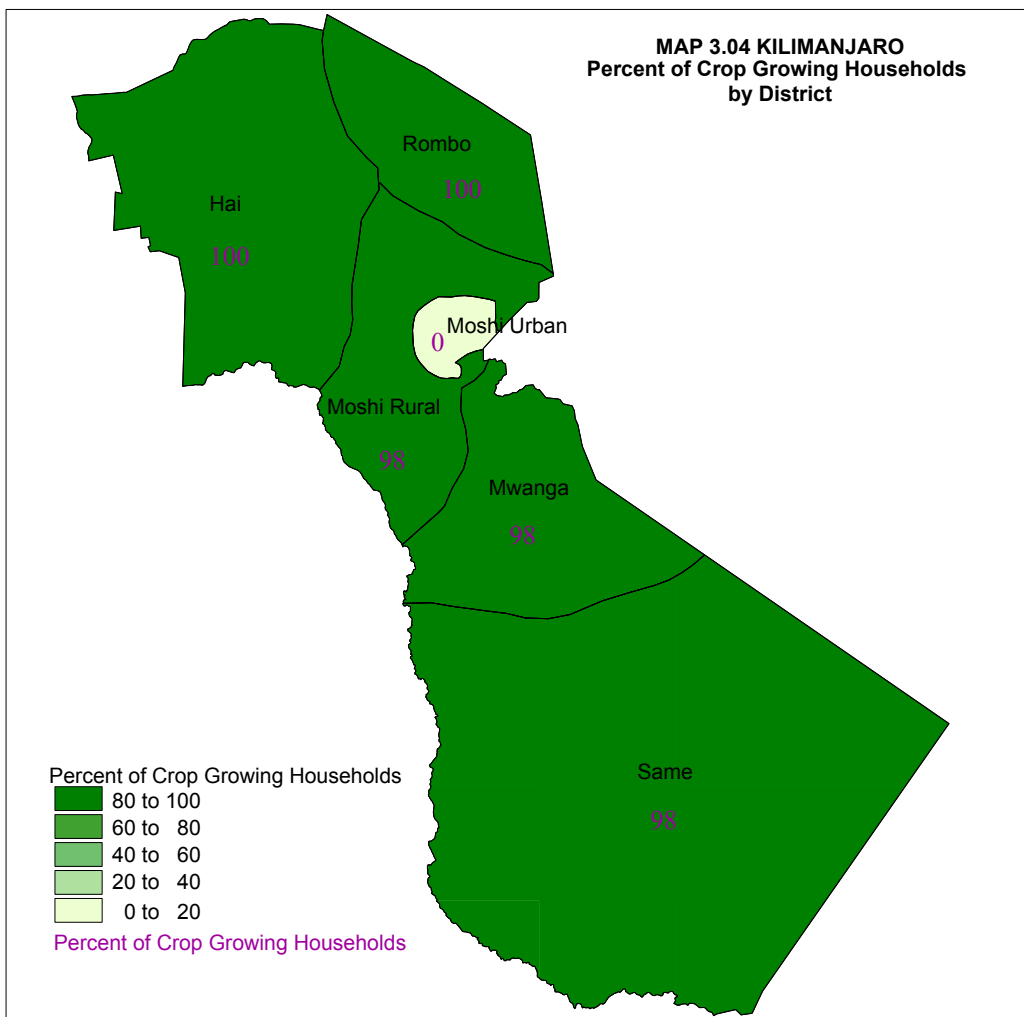
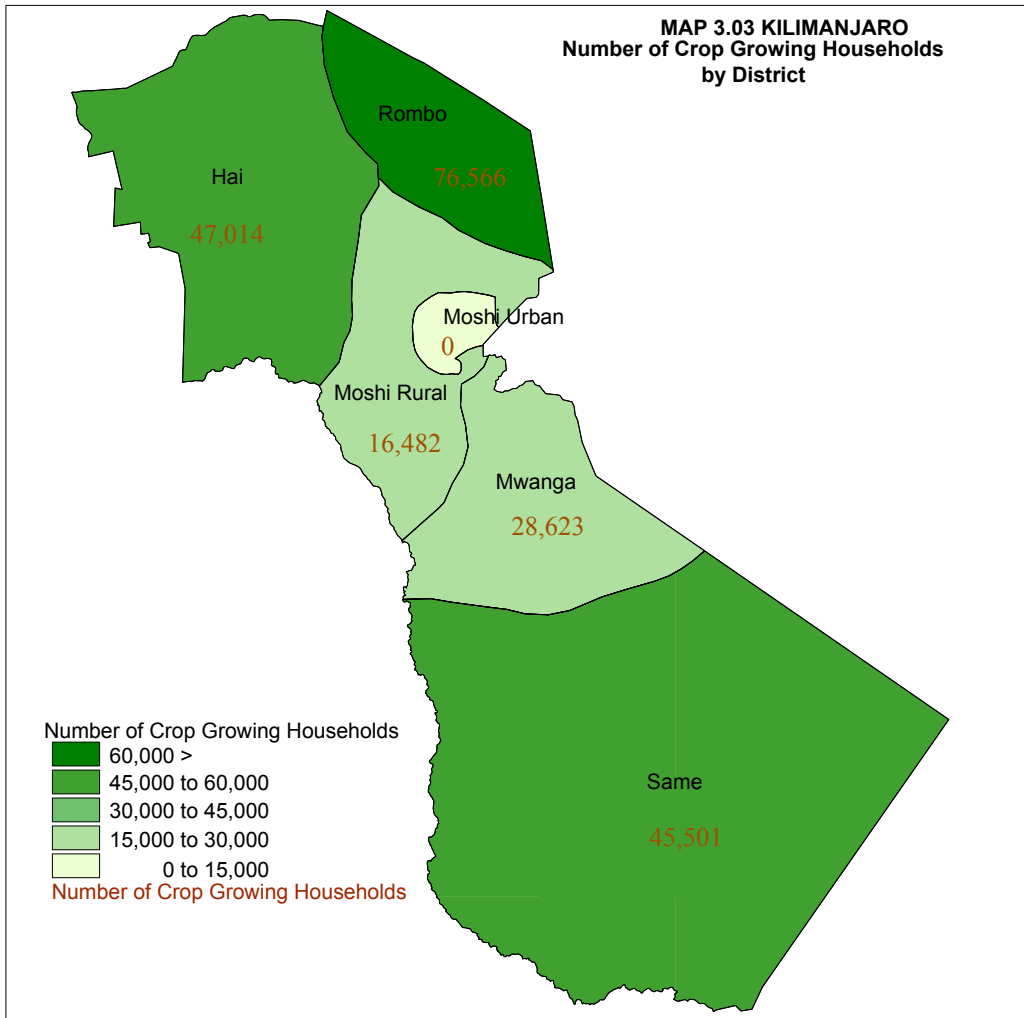
3.1 Household Characteristics

3.1.1 Type of Household

The number of agricultural households in Kilimanjaro region was 216,173. The largest number of agricultural households was higher in Moshi rural (76,826) followed by Rombo (47,014), Hai (46,481) Same (29,103) and Mwanga (16,749 the highest density of households was found in Moshi rural (221km²) (Map 3.2). Most households (156,467) were involved in crops & Livestock, (1,951, 0.9%) were rearing livestock only, and (59,040, 30.2%) were involved in crop production as well as livestock keeping. There were only (35, 0.1% pastoralist in Kilimanjaro Region. (Chart 3.1 and Map 3.2, 3.3, 3.4, 3.6 and 3.6)







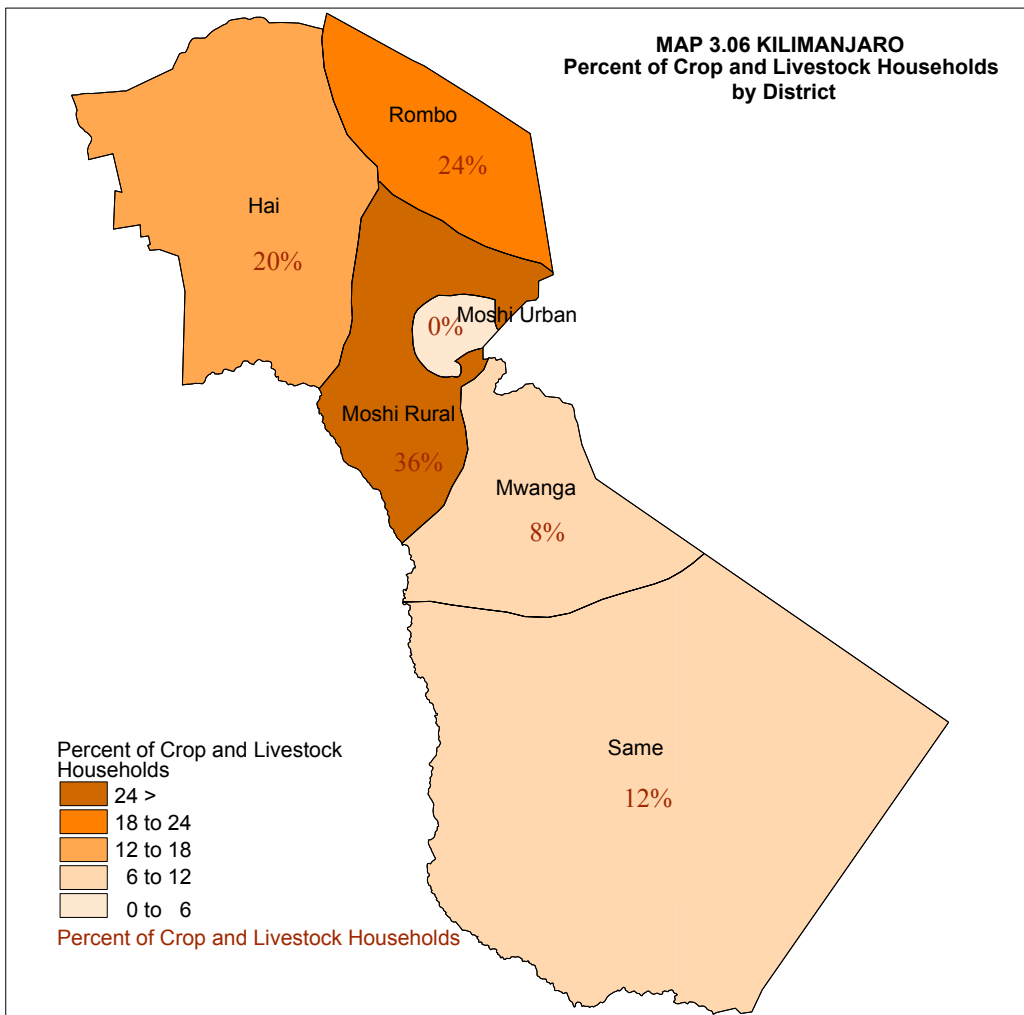
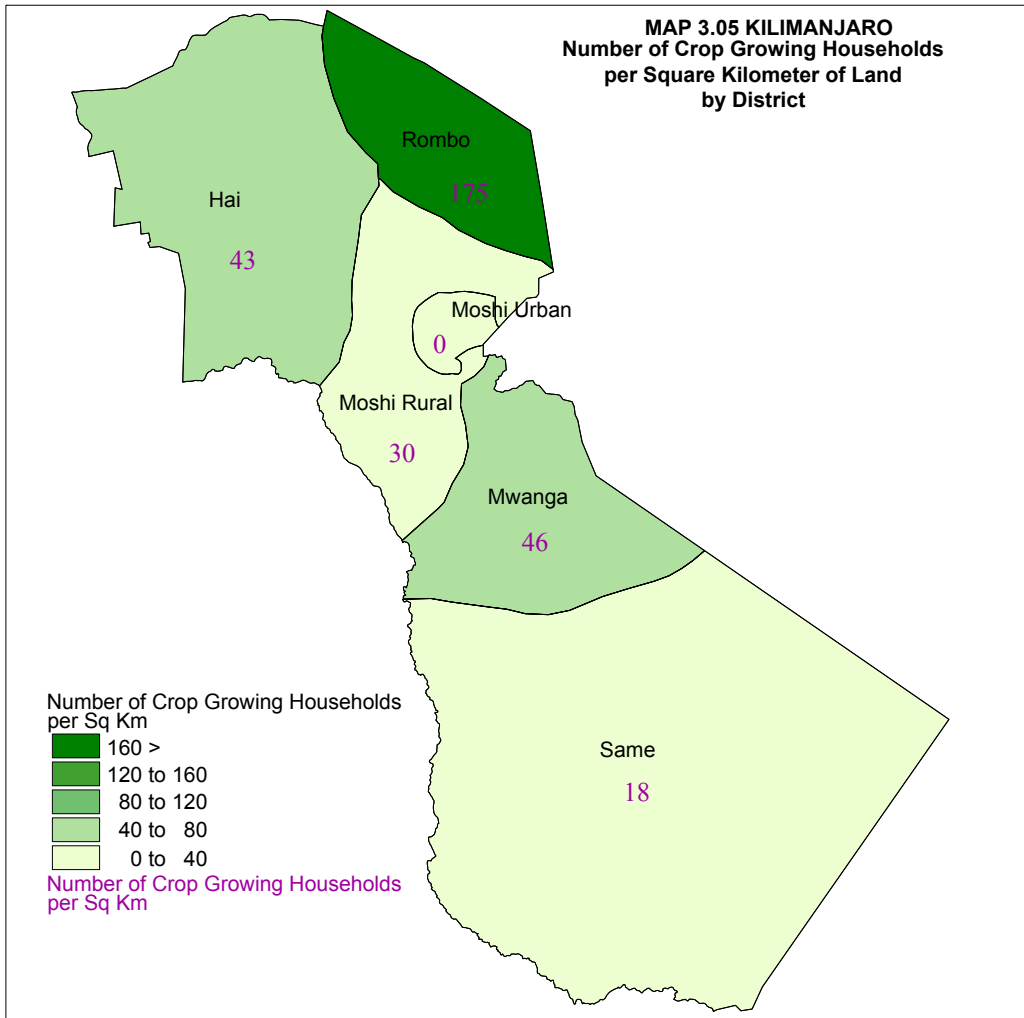


Table 3.1: The Livelihood Activities/Source of Income of the Households Ranked in Order of Importance by District

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	2	1	3	4	6	7	5
Mwanga	1	3	4	2	6	7	5
Same	1	2	3	5	6	7	4
Moshi Rural	1	2	3	4	6	7	5
Hai	1	2	3	5	6	7	4
Total	1	2	3	4	6	7	5

3.1.2 Livelihood Activities/Source of Income

The census results for Kilimanjaro region indicates that most of the agricultural households ranked annual crop farming as an activity that provided most of their cash income followed by permanent crop farming, livestock keeping/herding, off farm income, tree/forest resources, remittances, fishing hunting & gathering (Table 3.1)

Kilimanjaro Urban district was the district where annual crop farming was not the most important livelihood activity and was replaced by permanent crop farming.

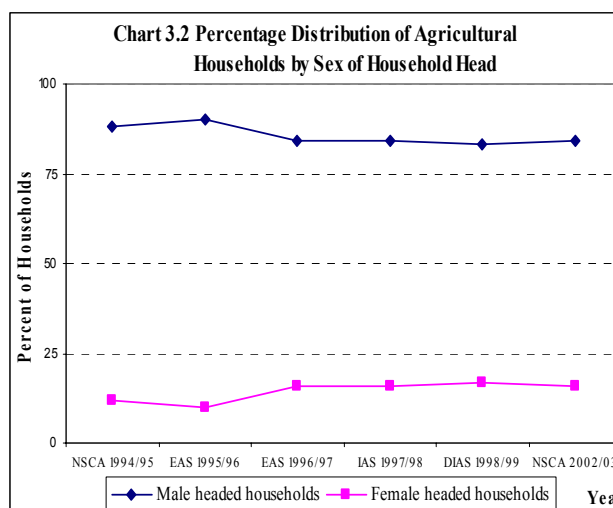
3.1.3 Sex and Age of Heads of Households

The number of male-headed agriculture households in Kilimanjaro region was 545,216 (48.9% of the total regional agricultural households) whilst the female-headed households it were 569,990 (51.1% of the total regional agricultural households). The mean age of household heads was 51 years

(50 years for male heads and 55 years for female heads) (Chart 3.2)

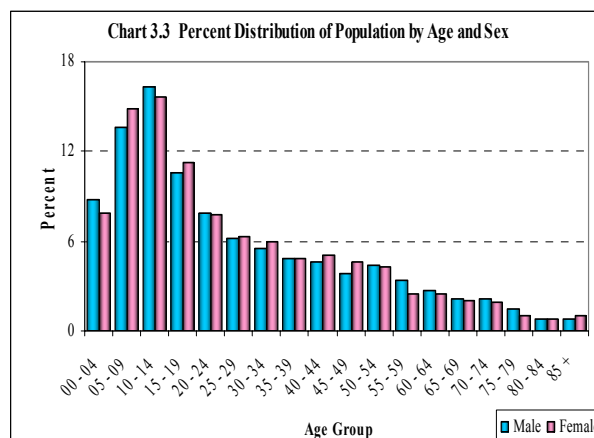
The percentage trend for six censuses/surveys years shows that there has

not been any significant change in the distribution of agricultural households between male and female headed households.



3.1.4 Number and Age of Household Members

Kilimanjaro region had a total rural agricultural Population of 1, 15,206 of which 545,216 (48.9%) were males and (569,990 51.1%) were females. Whereas age group 0-14 constituted 38.5 percent of the total rural agricultural population, age group 15-64 (active population) was 54.5 percent. Kilimanjaro region had an average household size of 5 with Rombo district having the highest households' size of 6 (Chart 3.3)



3.1.5 Level of Education

In order to obtain information on the level of education, information on literacy and education attainment were obtained for all persons aged five years and above in all households.

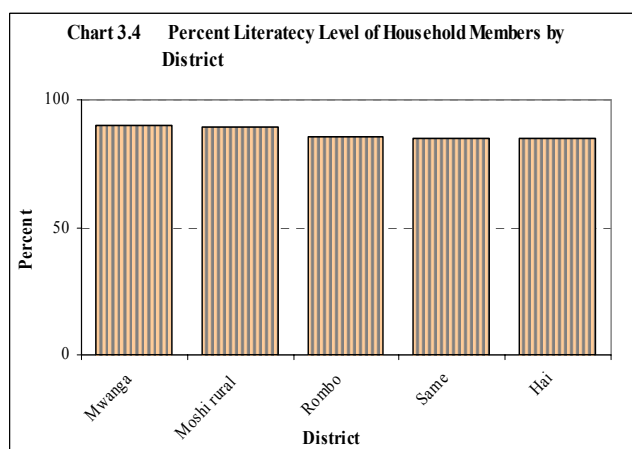
Literacy

The information on literacy level for family members aged five years and above was obtained by asking individual private households if their respective family members could read and write in Kiswahili only, English only, both English and Swahili or in any other language. Literacy is based on the ability to read and write Swahili, English or both.

Literacy Level for Household Members

Kilimanjaro region had a total literacy rate of 86.7 percent.

The highest literacy rate was found in Mwanaga district (87.7%) followed by Moshi rural district (89.3%), Rombo (85.3%), Same and Hai both had (84.8%), thus Same and Hai had the lowest literacy rates.

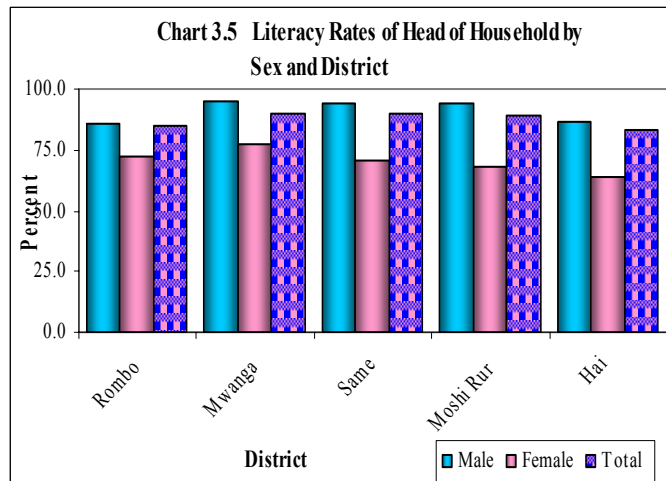


Literacy Rates for Heads of Households

The literacy rate for the heads of households in the region was 87.1 percent. The literacy rate for the male heads was 82% and that of female heads of households was 70%. Literacy rate of male heads was higher than that of female heads in all districts.

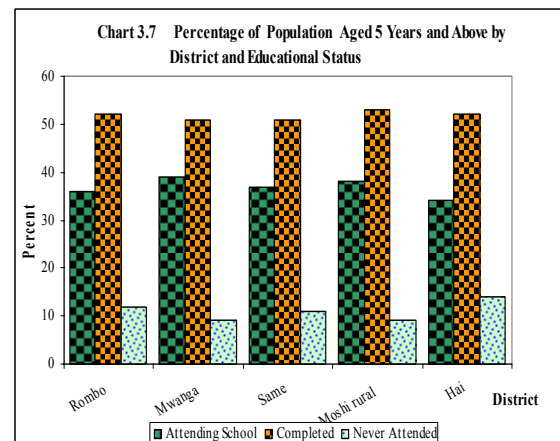
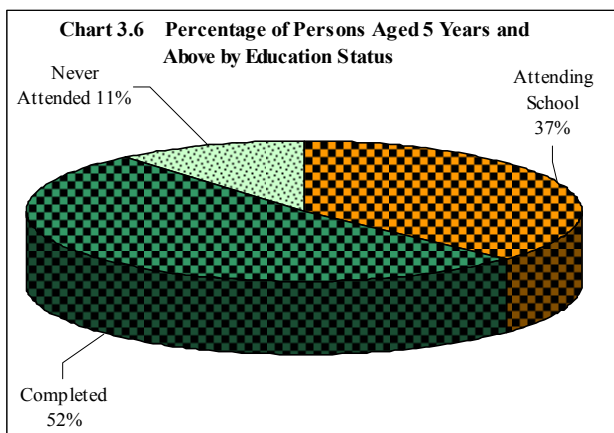
The district with the highest literacy rate amongst heads of households was Mwangwa (94.9%) followed by Moshi rural (94.2%), Same (93.9%), Hai (86.5%) and Rombo (86.5%).

(Chart 3.5).



Educational Status

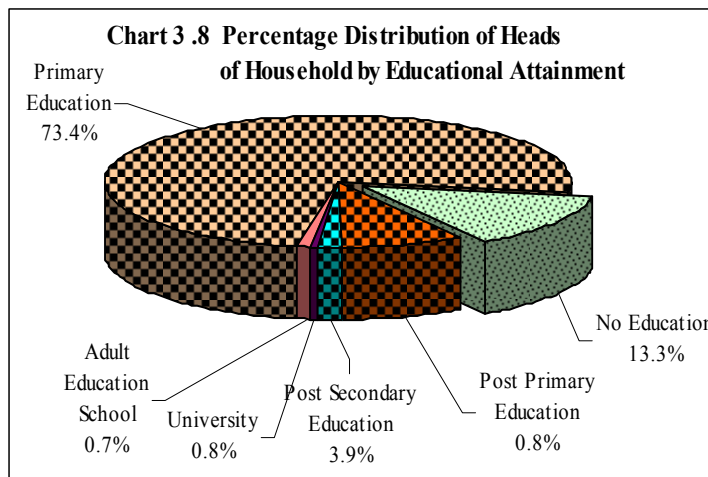
Information on educational status was collected from individual agricultural households. The results show that 52 percent of the population aged 5 years and above in agricultural households in the region had completed different levels of education and 37 percent were still attending school. Those who have never attended school were 11 percent (Chart 3.6).



Agricultural households in Moshi rural had the highest percentage (53.0%) of population aged 5 years and above who had completed different levels of education. This was followed by Rombo and Hai district (52%), Mwanga and Same both had 51 percentage.

The number of heads of agricultural households with formal education in Kilimanjaro region was 185,978

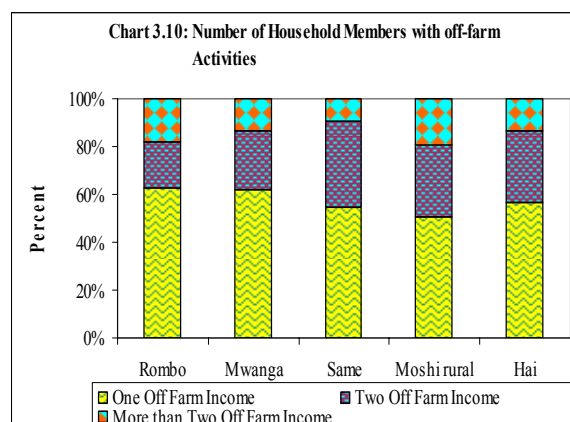
(86.0%), those without formal education were 28,714 (13.3%) and those with only adult education were 1,451 (0.7%). The majority of heads of agricultural households (73.4%) had primary level education whereas only 3.9% had post secondary education (Chart 3.8).

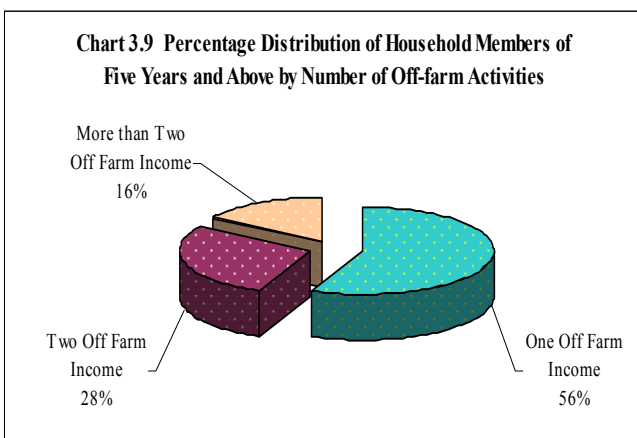


With regard to the heads of agricultural households with primary or secondary education in Kilimanjaro region, Same district had the highest percentages (83.3% for primary and 4.8% for secondary). It was followed by Mwanga (78.2% primary and 6.9% secondary), Hai (72.5% primary and 5.5% for secondary), Rombo (71.1% primary and 8.6% secondary) and Moshi rural (70.5% for primary and 11.9% for secondary)

3.1.6 Off-farm Income

Off-farm income refers to cash generated from non-agricultural activities. This can be either from permanent employment (i.e., government, private sector or other), temporary employment or labourers. It also includes cash generated from working on farms belonging to other farmers. Off-farm income is important amongst agriculture households in Kilimanjaro with 65.3% of households with at least one household member engaged in off-farm income generating activities, 79,886 households (56.6%) had only one member aged 5 years and above involved in off-farm income generating activities





38,977 households (27.6%) had two members involved in off-farm income generating activities and 22,299 households (15.7%) had more than two members involved in off-farm income generating activities.

The districts with highest percentage of households with off-farm income was Moshi rural followed by Rombo, Hai, Same and Mwanga.

The district with the highest percent of agriculture households with more than two members with off-farm income was Moshi rural (19.1%), Rombo (17.6%), Hai (13.1%), Mwanga (12.8%) and Same (9.1%).

3.2 Land Use

Land area and planted area are different types of area measurements. Land area refers to the physical area of land and is the same regardless of the number of crops planted on it in one year. Planted area is the total of all areas planted with crops in a year and the areas are summed if there were more than one crop on the same year. A number of terms are used in this section which requires defining for clarification as follows:

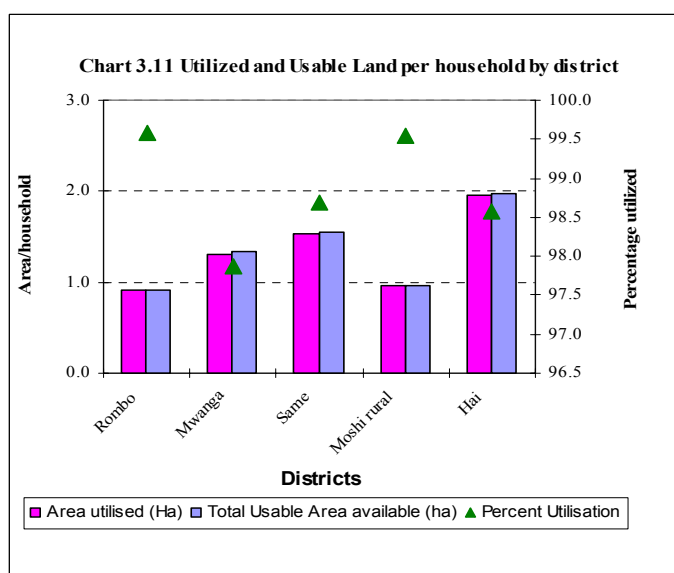
Land available refers to the area of land that had been allocated to smallholders through customary law, official title or other forms of ownership. Land available does NOT mean the total area of land that is designated as agricultural land in the country; Instead it is the land that is available to smallholders given the location of villages and lack of access to more remote parcels of unused through designated of agricultural land.

Usable land refers to the available land minus the land that cannot be used e.g. bare rock, shallow soils, steep slopes, swamp areas etc. It does however include un-cleared bush, Utilised land refers to the land that was used during the year.

3.2.1 Area of Land Utilised

The total area of land available to smallholders was 276,325 ha, including 2,885 of unusable land. At Regional level the average land area utilised for agriculture per household was only 1.3 ha.

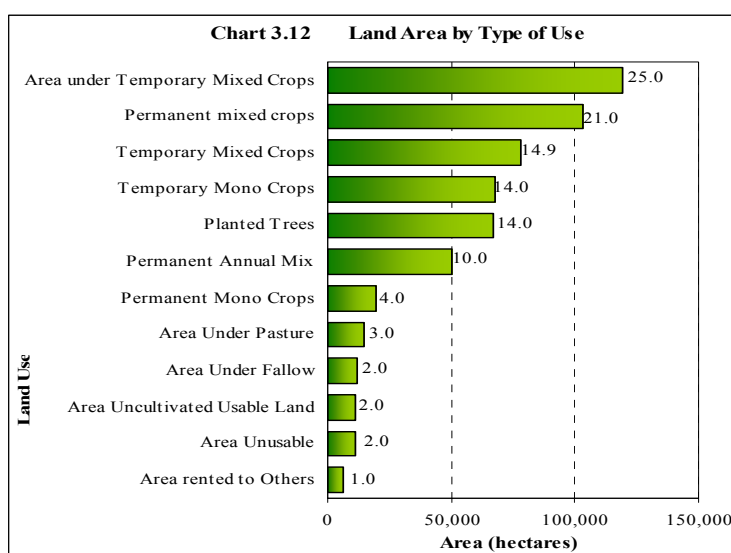
This figure is below to the national average which was estimated at 2.0 hectares. The percent utilized of the land available to smallholders was 99%. There were small differences in land utilization per household between districts with Hai district utilizing 2.0 ha



per household. The smallest land area utilised per household was found in Rombo (0.9 ha). The percentage utilized of the usable land per household is highest in Rombo (99.6%) and lowest in Mwangi where 97.9% of the total land available to smallholders was utilised and only 1.0 percent of usable land available to smallholders was not used (Chart 3.11 and Map 3.7).

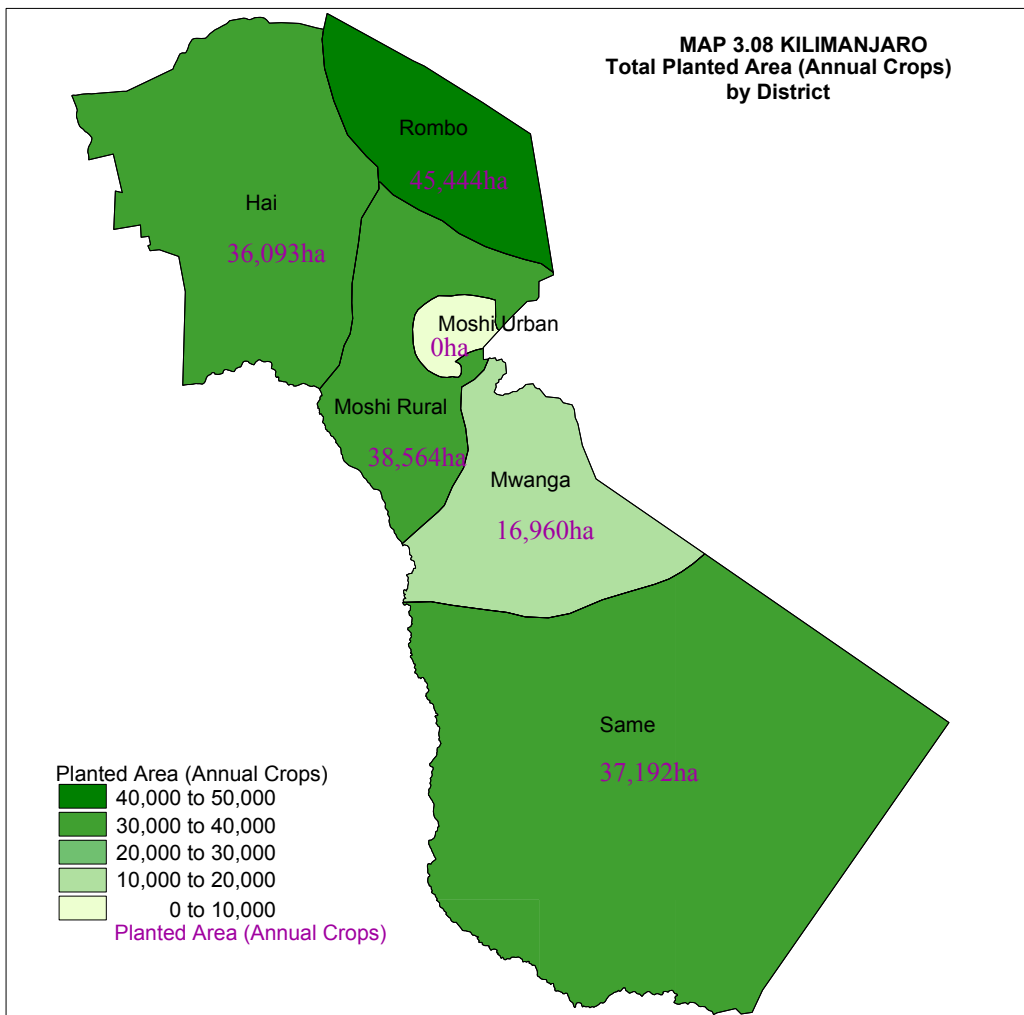
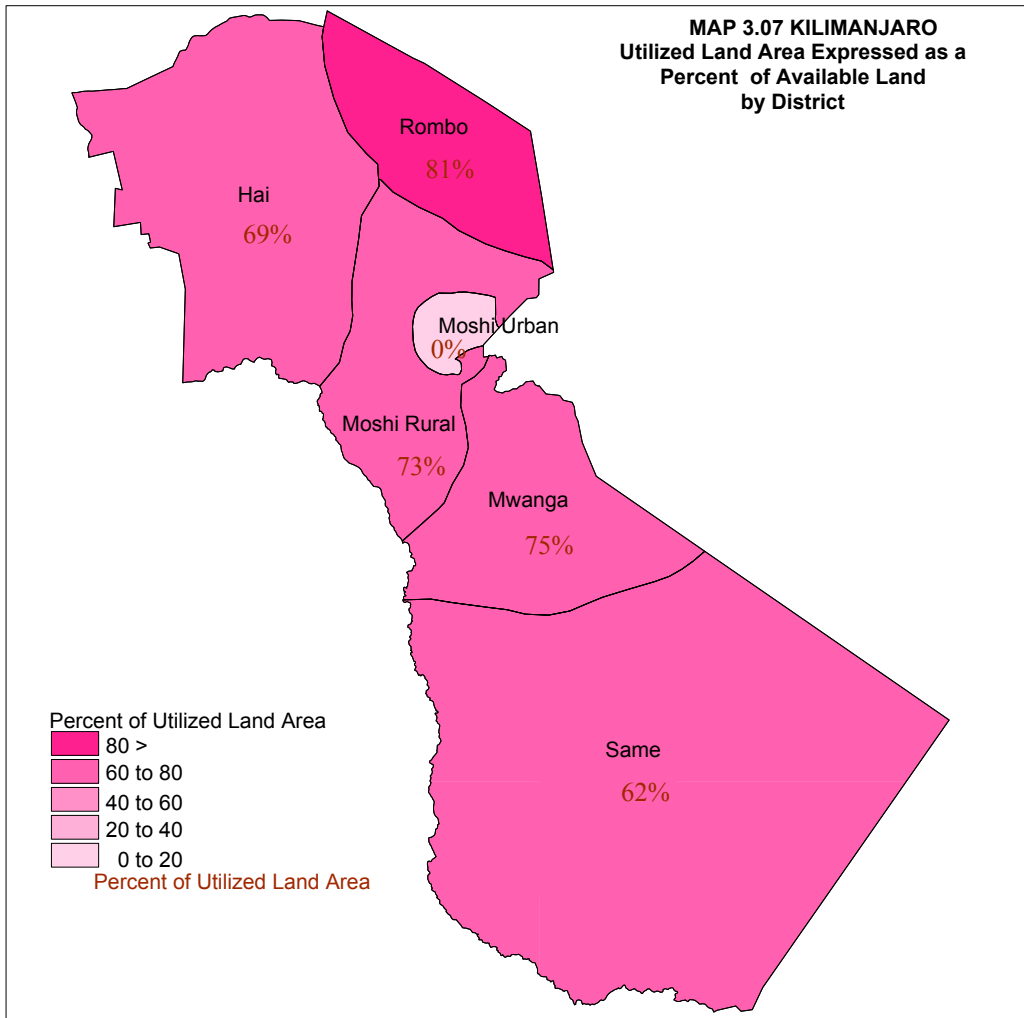
3.2.2 Types of Land Use

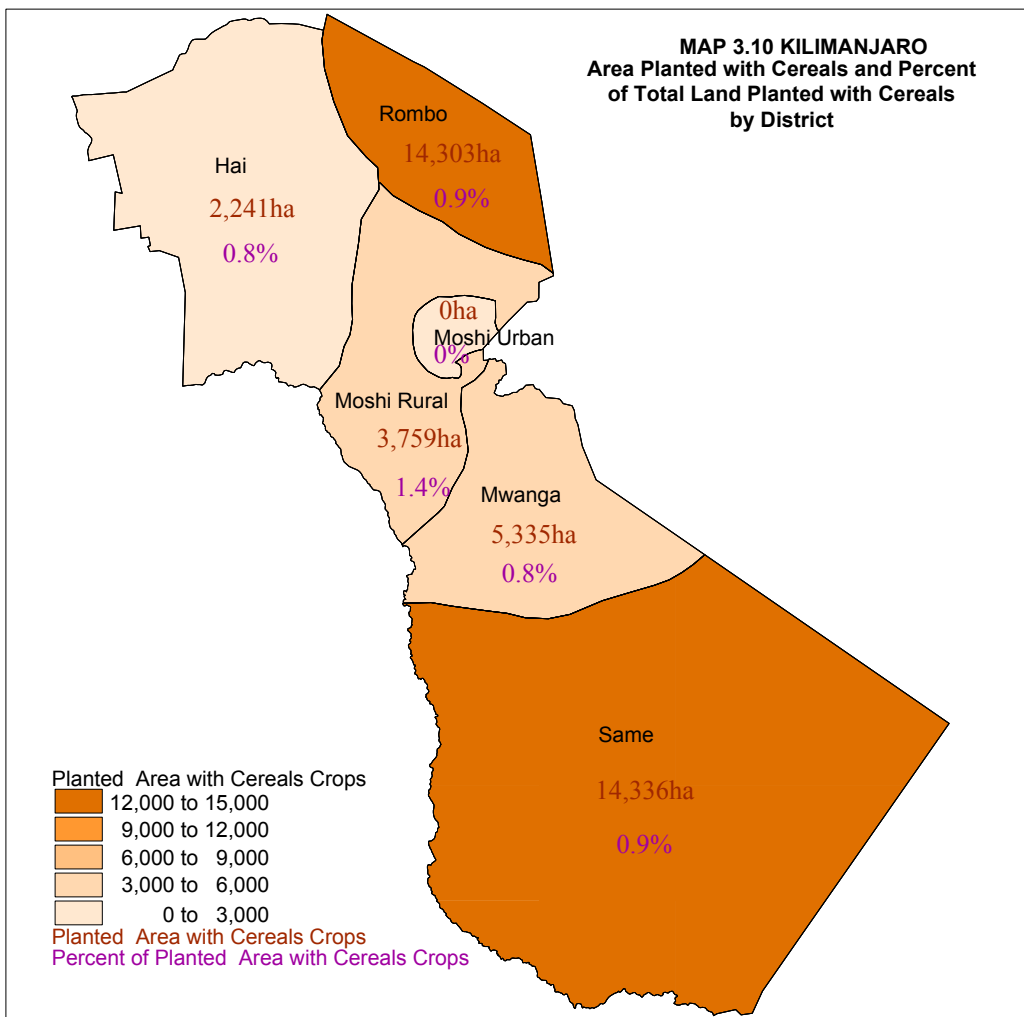
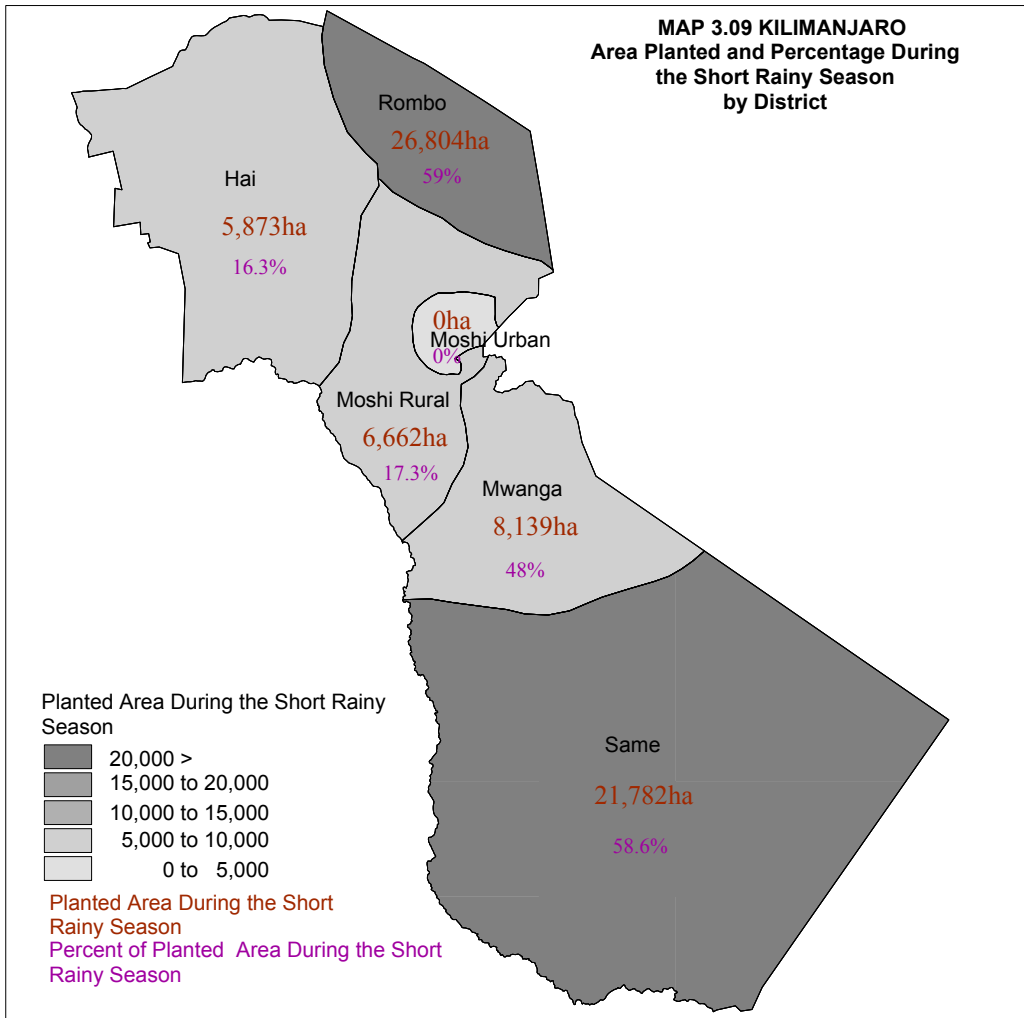
The area of land under temporary mixed crops was 119,239 hectares (25.0% of the total land available to smallholders in Kilimanjaro), followed by area of permanent mixed crops (103,463 ha, 21%), area of temporary mono crops (67,419 ha, 14%), planted tree (67,419 ha, 14%), permanent annual mix (50,164 ha, 10%), permanent mono crops 19,457 ha, 4%), area under pasture (14,662 ha, 3%), area under fallow 11,946 ha, 2%), area uncultivated usable land 11,214 2%), area unusable 11,214 ha, 2%) and area rented to others 6,021 ha, 1%).



3.3 Annual Crops and Vegetable Production

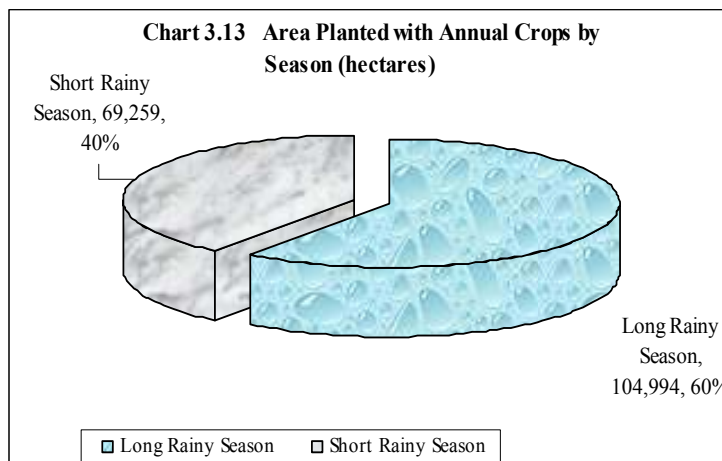
Kilimanjaro region has two rainy seasons, which are the short rainy season (October to December) and the long rainy season (March to May). The quantity of crops produced in both seasons will be used as a base for comparison with the past surveys and censuses.



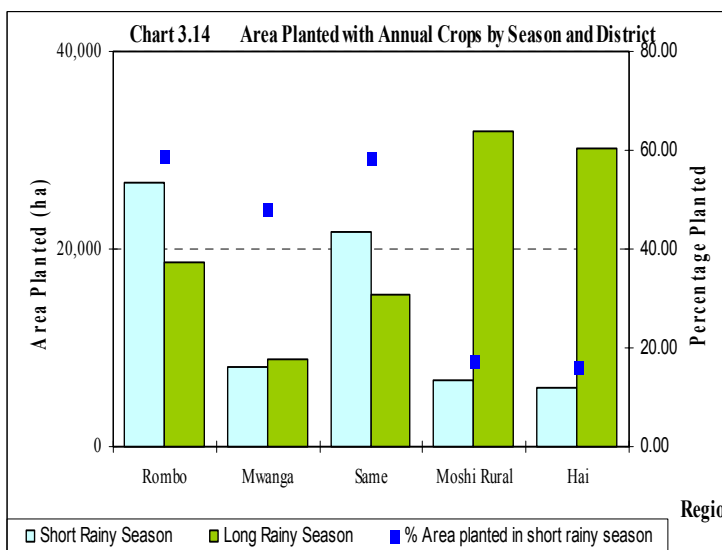


3.3.1 Area Planted

The area planted with annual crops and vegetables was 174,253 hectares out of which 104,994 hectares (60%) were planted during long rainy season and 69,254 hectares (40%) during long rainy season. The average areas planted per household during the long and short rainy seasons were 1.5 ha and 2.5 ha respectively (Chart 3.13).

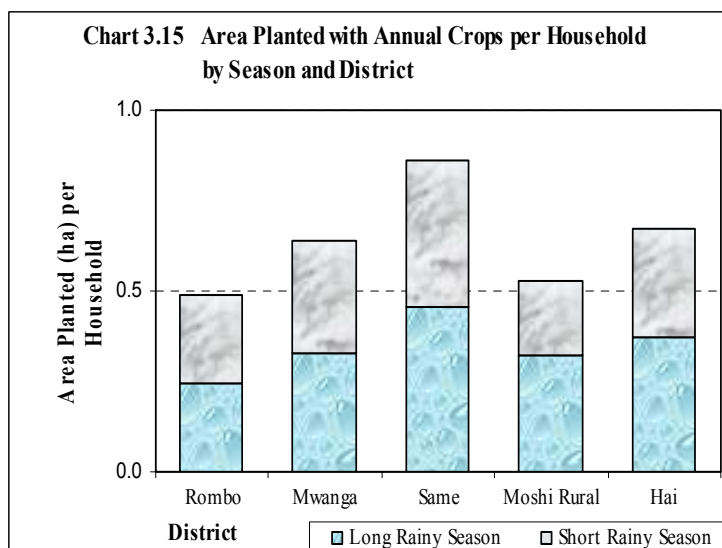


The district with the large area planted for both two seasons was Rombo while the district with the smallest area planted was Mwanza and the percentage planted during short rainy season was highest in Rombo district (38%), followed by Same (31.4%), Mwanza (12%), Moshi rural (9.6%), and Hai (8.4%). (Chart 3.14 and Map 3.8).



The planted area occupied by cereals was 63,594 ha, (60.6% of the total area planted with annuals). This was followed by pulses 28,590 hectares, (27.2%), roots & tubers 5,545 hectares (5.3%), oil seeds & oil nuts 5,358 hectares, (5.1%), fruits and vegetables 1,887 hectares, (1.7%) and cash crops 22 hectares (0.02%)

The average area planted per household during the long rainy season in Kilimanjaro region was 1.03 hectares, however, there were



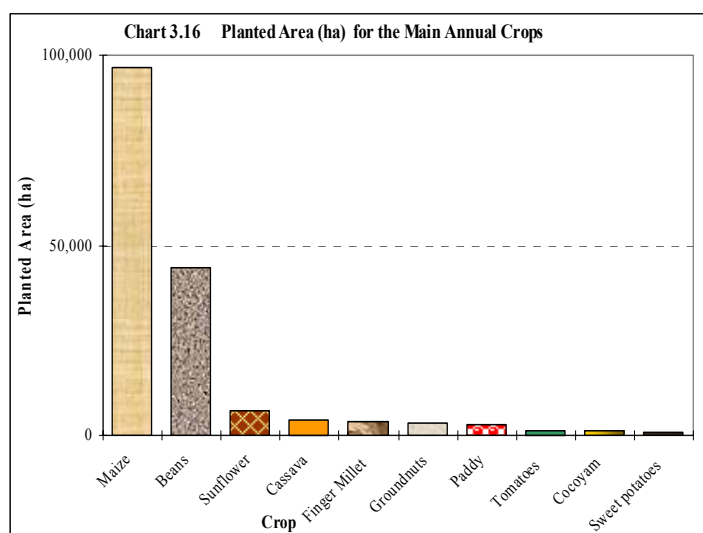
small district differences. Same had the largest planted area per household (0.5 ha) followed by Hai (0.4 ha), Moshi rural & Mwanga both had 0.3% and Rombo (0.2 ha). In Rombo the area planted per household in the short rainy season represents 38.7 percent of the total planted area per household, whereas in Hai the corresponding figure is 8.4 per cent. (Chart 3.15 and Map 3.9).

Analysis of the Most Important Crops

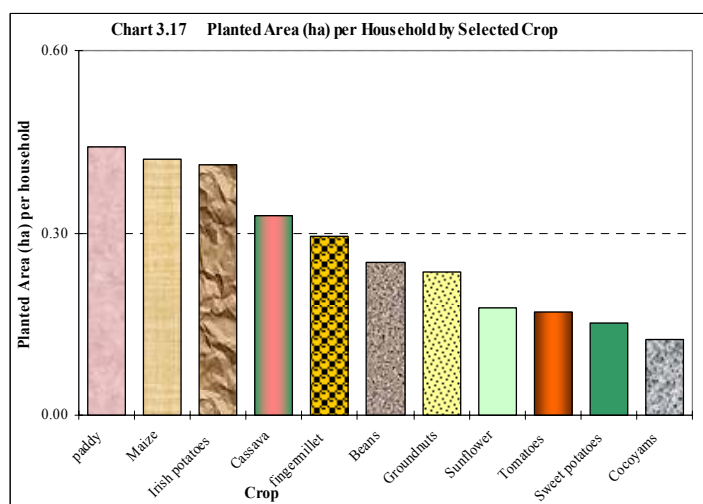
Results on crop production are presented in two different sections. The first section compares the importance of all crops regardless of whether they are annual or permanent. The second section contains a more detailed analysis on production based on crop types.

3.3.2 Crop Importance

Maize was the dominant annual crop grown in Kilimanjaro region and it had a planted area 96,593 ha, followed by beans which had the second largest planted area of 44,284 ha. Of the area planted with annuals, maize constitutes 55 percent. Other crops in order of their importance (based on area planted) were maize, beans, sunflower, cassava, finger millet, groundnuts, paddy, tomatoes, cocoyams, amaranths, cocoyams and sweet potatoes (Chart 3.16).



Households that grow maize, paddy, irish potatoes have larger planted areas per household than other crops (Chart 3.16).



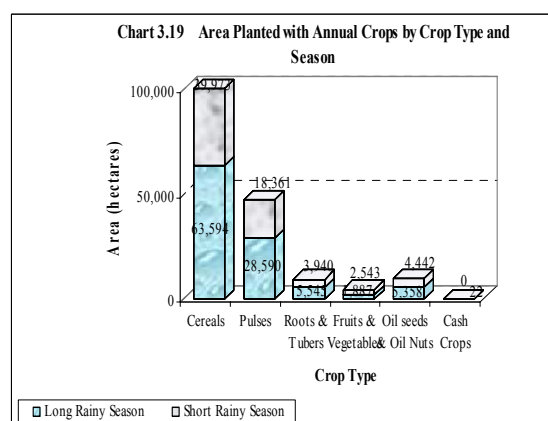
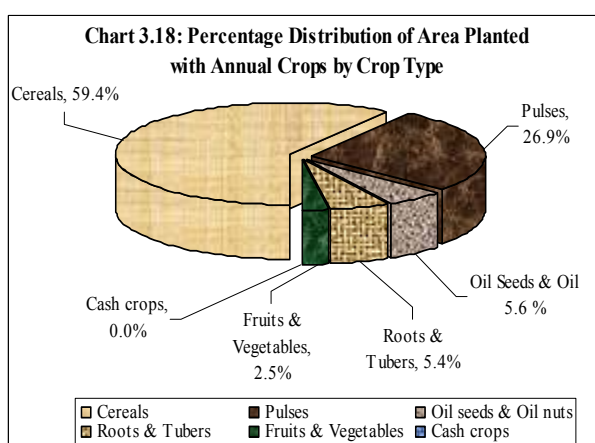
3.3.3 Crop Types

Chart 3.17 shows the area planted per household growing selected crops. Crops that are mainly grown for cereals have a larger planted area per household than other crops e.g paddy and maize. An Irish potato has the third highest planted area per household growing that crop than staple crops whereas vegetables have the lowest planted area per households. Cereals and root and tubers are the dominant crops and other crop types are of minor

and maize. An Irish potato has the third highest planted area per household growing that crop than staple crops whereas vegetables have the lowest planted area per households. Cereals and root and tubers are the dominant crops and other crop types are of minor

Cereals are the main crops grown in Tanzania. The area planted with cereals was 103,563 ha (59.4% of the total planted area), followed by pulse with 46,950 ha (26.9%), oil seeds & oil nuts 9800 ha (5.6%), roots & tubers 9,800 (5.4%), cash crops are normally permanent crops and are not totally reflected in chart 3.18 vegetables are underestimated because of difficulties in establishing the area and production on small household plots (Chart 3.18).

There is little difference in proportions of the crop types grown between seasons. Short rainy season production was very small compared to that of the long rainy season and it is therefore inappropriate to make detailed comparison between two seasons. Cereals, pulses and roots and tubers are the dominant crops grown in both seasons. Other crop types are of minor importance in comparison (chart 3.18)



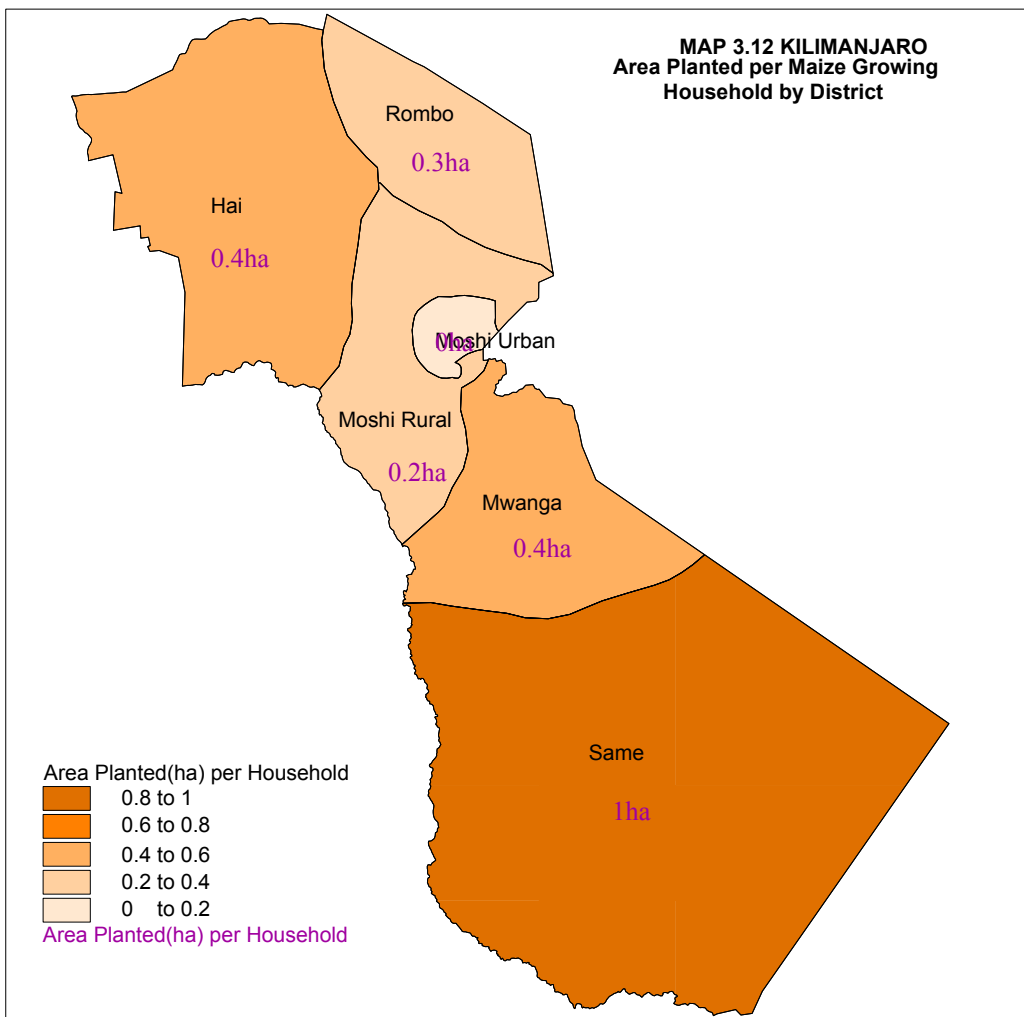
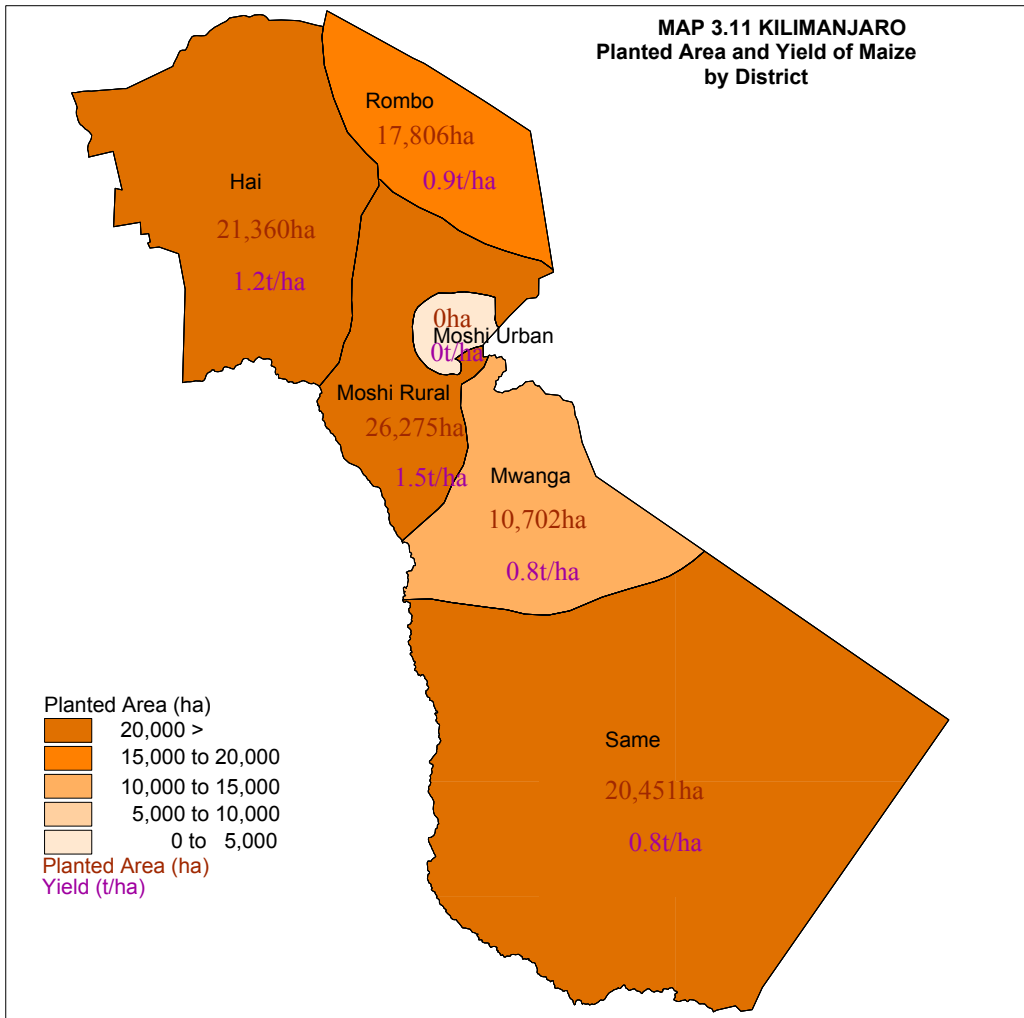
3.3.4 Cereal Crop Production

The total production of cereals was 117,190 tonnes. Maize was the dominant cereal crop at 105,222 tonnes which was (89.8%) of total cereal crops produced, followed by paddy 10,724 tonnes (9.1 %) sorghum 146 tonnes (0.1%) , and finger millet 1098 tonnes (0.9 %), (Map 3.10).

Table 3.2: Area, Production and Yield of Cereal Crops by Season

Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Maize	38,275	33,360	872	58,318	71,861	1,232	96,593	105,222	2104
Paddy	1,443	4,586	3,177	1,585	6,138	3,871	3,029	10,724	7049
Sorghum	116	78	667	137	69	502	253	146	1170
Finger Millet	139	38	273	3,553	1,060	298	3,692	1,098	571
Total	39,973	38,062		63,594	79,128		103,567	117,190	

The total area planted with cereals was 103,567 ha out of which 39,973 ha (38.5%) were planted in short rainy season and 63,594 ha (61.4%) were planted during the long rainy season. The long rainy season accounted for 61.4 percent of the total cereals produced in both seasons. The area planted with maize during the long rainy season was 56.3% of the total area planted with cereals in that season followed by finger millet (3.4%), paddy (1.5%), and sorghum (0.1%). Table 3.2



The area planted with maize was dominant and it represented 93.3% of the total area planted with cereal crops, was followed by finger millet (3.4%), paddy (2.2%), finger millet (1.1%) and sorghum with (0.2%)..

The yield of paddy was 7049 kg/ha, followed by maize (2104 kg/ha), sorghum (1170 kg/ha), finger millet (571 kg/ha)

3.3.4.1 Maize

Maize dominated the production

of cereal crops in the region. Moshi rural had the largest area of Maize (26,275 ha, 27.2%), followed by Hai (21,360 ha, 22.1%), Same (20,451 ha, 21.2%), Rombo (17,806 ha, 18.4%) and Mwangi (10,702 ha, 11.1%). The average area planted with maize per household was 0.4 hectares, however there were small district differences, Same had the largest area planted per household (0.6 ha), Hai (0.5 ha), Mwangi (0.4 ha) Moshi rural (0.4 ha) and Rombo (0.3 ha) Chart 3.21.

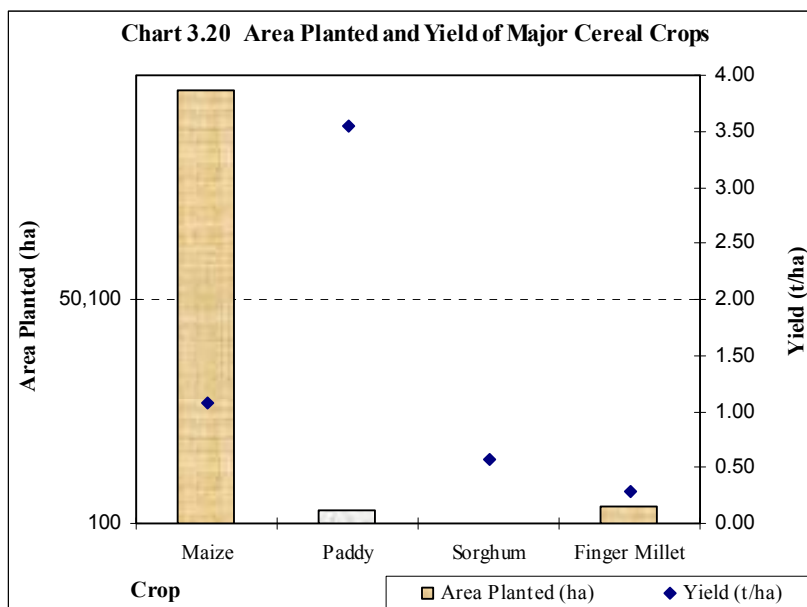


Chart 3.21.

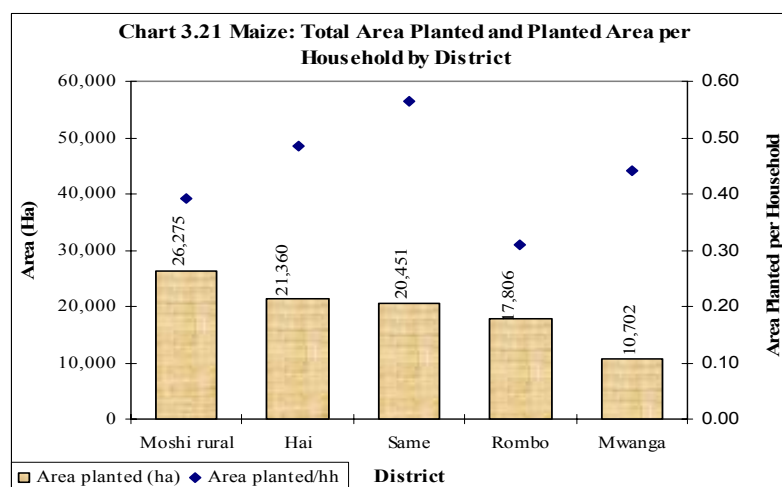


Chart 3.22 gives maize production trend (in thousand metric tonnes) for the combined long and short rainy seasons. There was a continuous increase in maize production over the three year period from 1998 to 2000 followed by a drop in production from 110 tonnes to 105 tones in 2002/03.

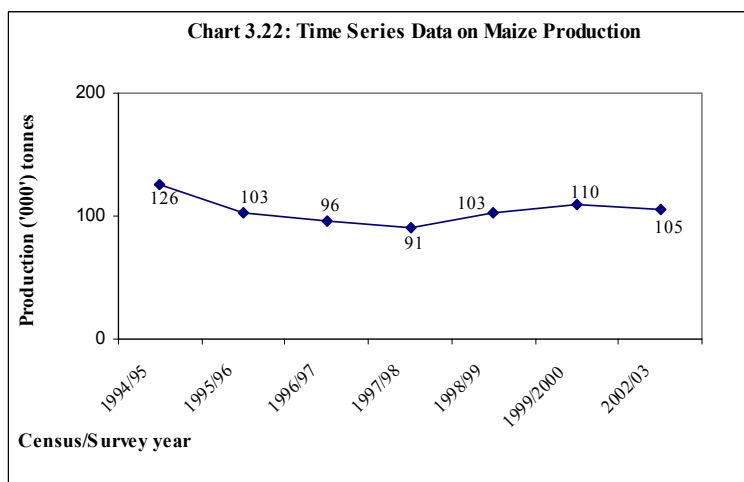
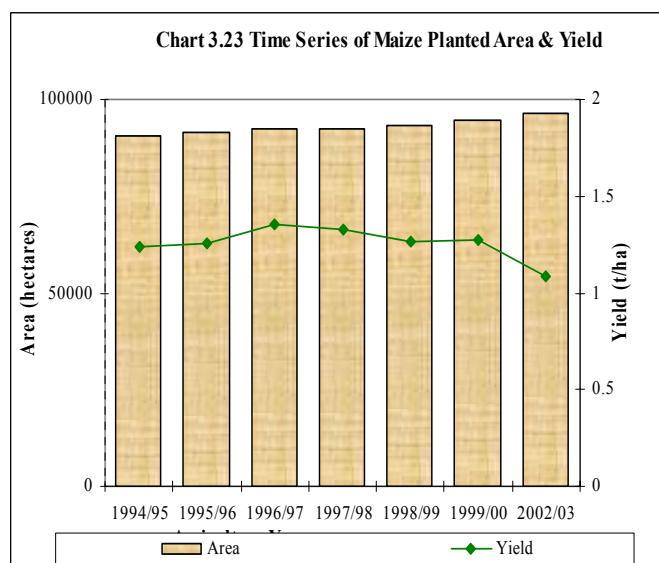


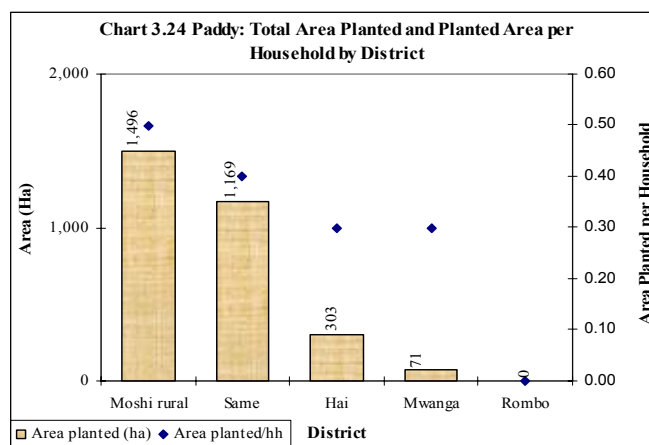
Chart 3.23 shows that, the yield of maize declined steadily over the period 1996 to 2002/03 the yield for the year 1995 to 1996 was relatively high.

On the other hand the area planted with maize increased over the entire eight – year period from 1995 to 2003. (Chart 3.23 and 3.14)



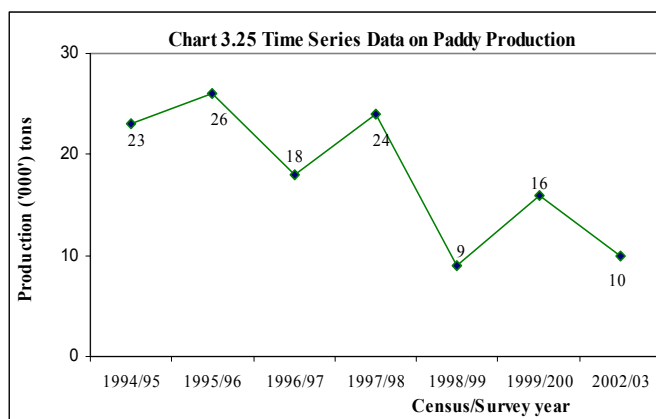
3.3.4.2 Paddy

Moshi rural had the largest area of Paddy (1,486 ha, 49.1%), followed by Same (1,169 ha, 38.6%), Hai (303 ha, 10.0%), Rombo (17,806 ha, 18.4%) and Mwanga (71 ha, 2.3%) and paddy were not reported in Rombo district The average area planted with paddy per household was 0.4 hectares, however there were small district differences, Moshi rural had the largest area planted per household (0.5 ha), Same (0.4 ha), Hai (0.3 ha) and Mwanga (0.3 ha) Chart 3.23.



There was a fluctuation in the production of paddy in 1995/96, 1997/98, 1998/1999 and 1999/00, but by the 2002/03 production had dropped significantly. Chart 3.24

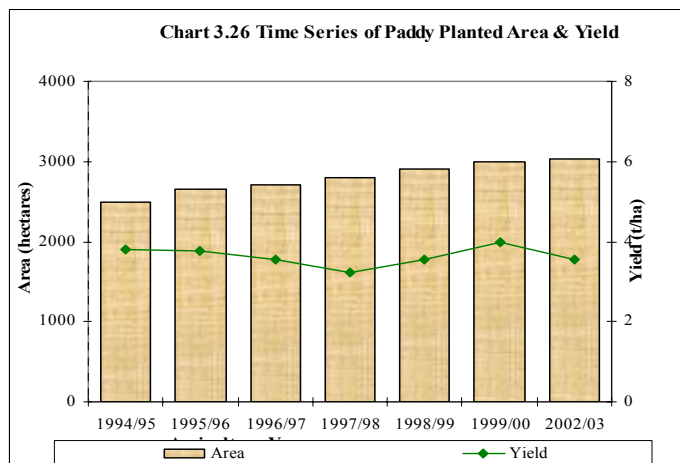
Chart 3.25 shows that, the yield of paddy declined steadily over the period 1996 to 1998, then the yield for the year 1999 to 2000 was relatively high and the production started declined significantly in 2002/03



On the other hand the area planted with paddy increased over the entire eight –year period from 1995 to 2003. (Chart 3.23 and 3.14)

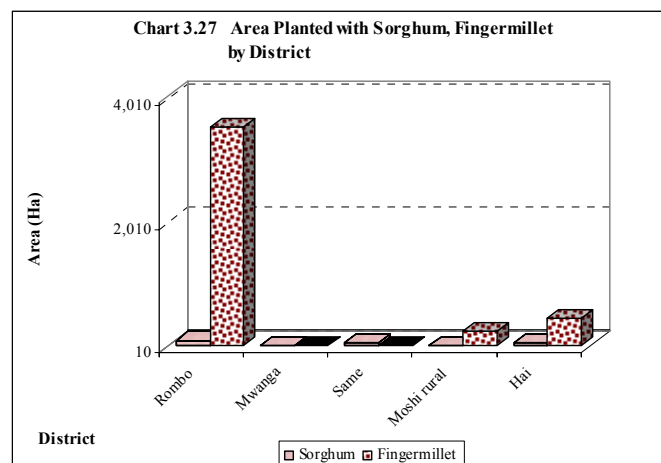
3.3.4.3 Other Cereals

In terms of area planted with other cereals, bulrush millet and finger millet were less important crops compared to sorghum. The district with the largest area planted with sorghum was Rombo (2,875ha) and Hai (1,499 ha) and Moshi rural (30 ha) There was no bulrush and finger millet production reported in Mwangi, Same, and Moshi rural districts. (Chart 3.26 Map 3.16).



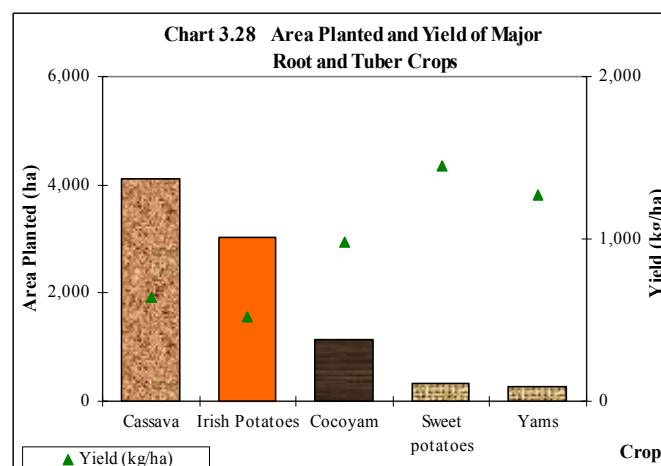
3.3.5 Roots and Tuber Crops Production

The total production of roots and tubers was 21,040 tonnes. Irish potatoes production was higher than any other root and tuber crop in the region with a total production of 15,592 tonnes representing 74.1 percent of the total



production. This was followed by cassava with 2,628 tonnes (12.5%), sweet potatoes (1,283 tonnes 6.1%) the remaining other crops contribute less than 5% of the total production.

The estimated yield was highest for sweet potatoes (1,448 kg/ha) followed by yams (1,274 kg/ha) cocoyams (978kg/ha), cassava (639 kg/ha) and irish potatoes (517kg/ha) .



The area planted with cassava was larger than any other root and tuber crops, followed by Irish potatoes, cocoyams, sweet potatoes and yams. Chart 3.26

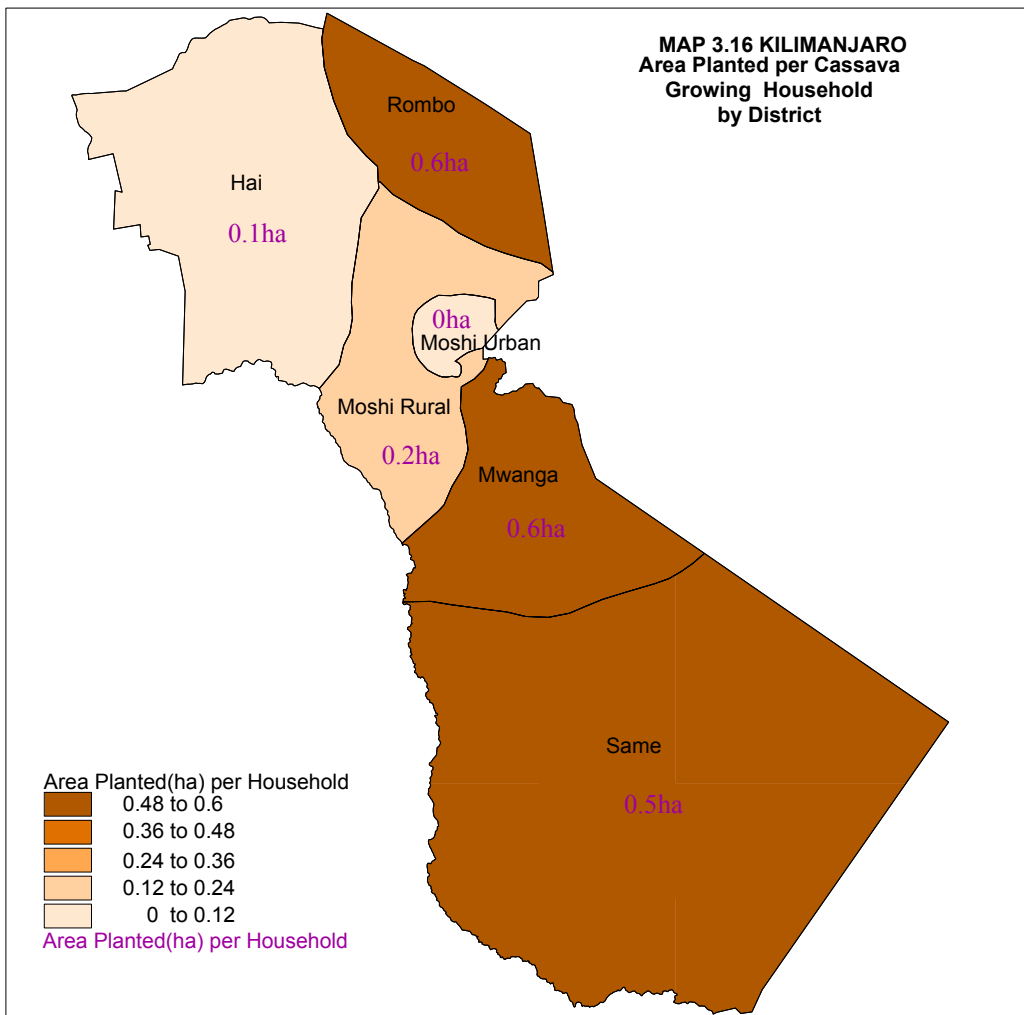
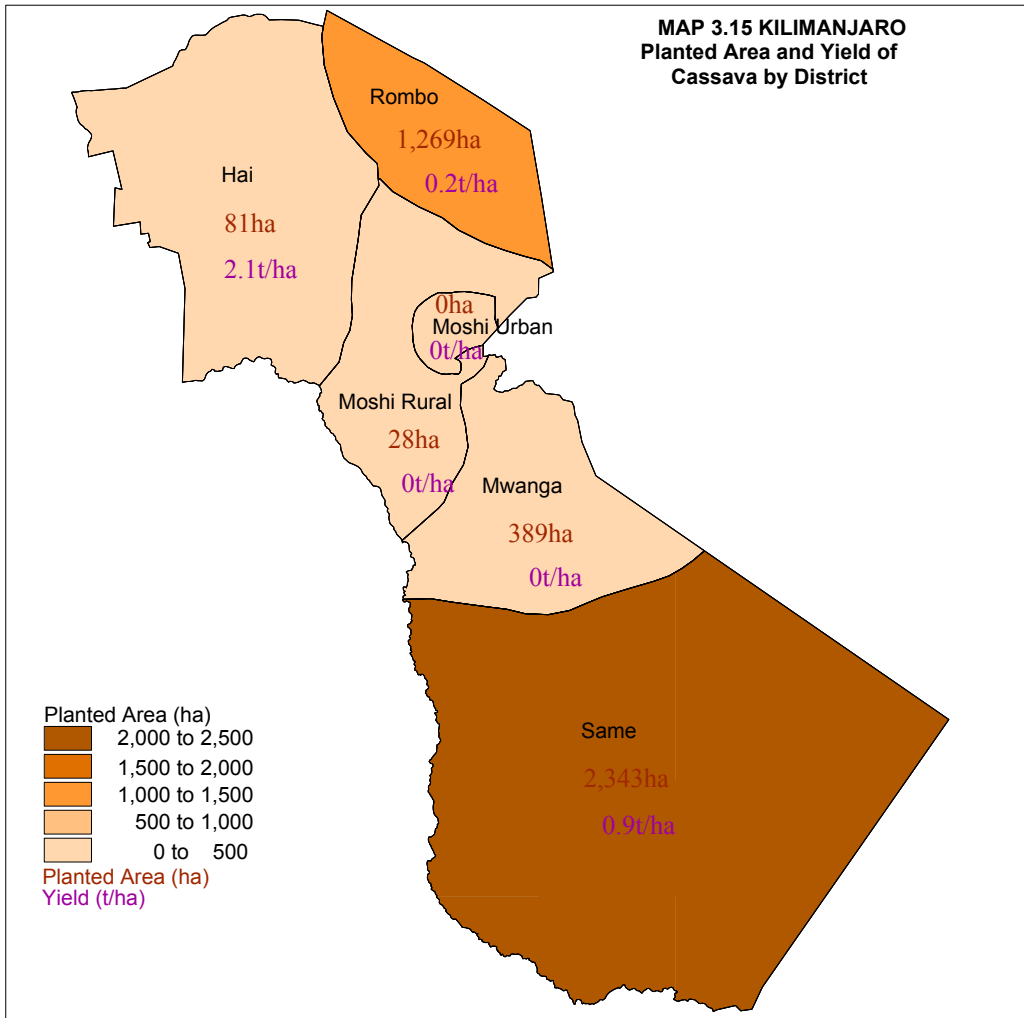


Table 3.3: Area planted and quantity harvested by season and type of root and tuber crop

Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Cassava	820	652	795	3,290	1,977	601	4,110	2,629	1,396
Sweet Potatoes	605	960	1,587	280	322	1,150	885	1,282	934
Irish Potatoes	1,618	8,334	5,151	1,398	7,257	5,191	3,016	15,591	1,346
Yams	237	172	726	1,317	90	68	1,554	262	417
Cocoyam	959	536	559	486	584	1,202	1,445	1,120	2,455
TOTAL	4,239	10,654		6,771	52,752		47,614	67,966	

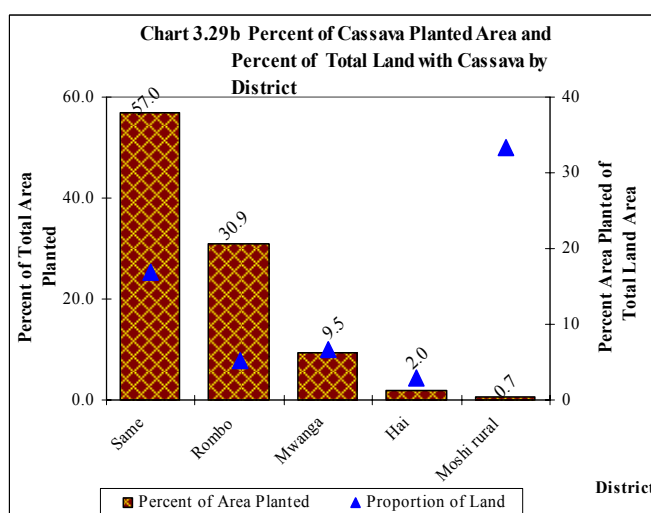
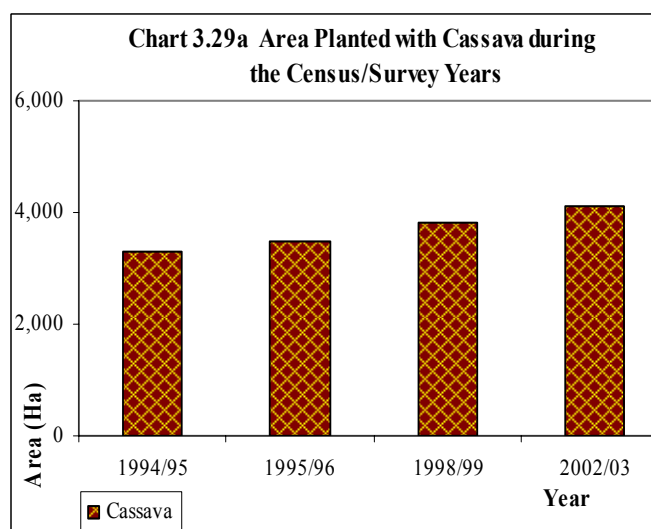
Note: Cassava is produced in both the long and short rainy seasons. However, it was not possible to separate cassava production in the different growing seasons as the growth period spans both seasons and even over a year in certain varieties. Because of this, cassava has been combined and is reported mainly under the long rainy season.

It is difficult to determine the total planted area and production for the short and long rainy seasons for roots and tubers as the total production of cassava has been reported under the long rainy season.

3.3.5.1 Cassava

The number of households growing cassava in the region was 12,534. This represented about 2 percent of the total crop growing households in the region. The total production of cassava during the census year was 2,628 tonnes from a planted area of 4,111 hectares resulting in a yield of 0.6 t/ha.

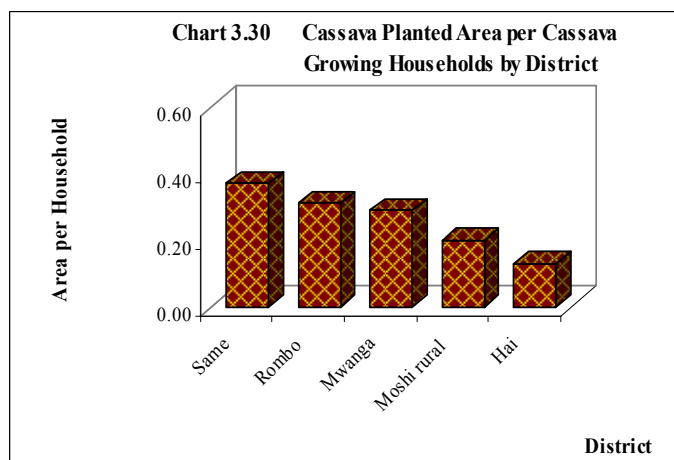
Previous censuses and surveys indicate that the area planted with cassava increased over the period 1995 to 2002/03. (Chart 3.28) The area planted with cassava accounted for 2.4 percent of the total area planted with annual crops and vegetables in the census year.



Same district had the largest planted area of cassava (2,343 ha) of cassava planted area in the region), followed by Rombo (1,269 ha), Mwanga (389 ha) Hai (81 ha) and Moshi rural (28 ha) (Chart 3.28 and Map 3.18)

However, the district with the highest proportion of its land planted with cassava was in Same (57.0%). This was followed by Rombo (30.9%), Hai (2.0%), and Moshi rural (0.7%) (Chart 3.28).

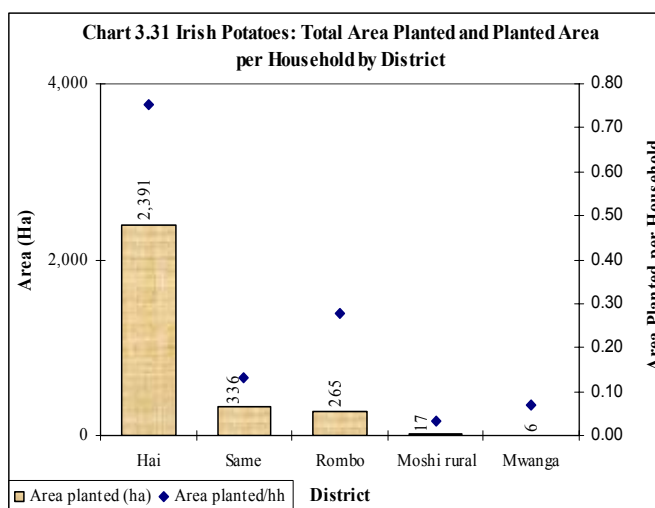
The average cassava planted area per cassava growing household was 0.3 hectares. However, there were small district variations. The area planted per cassava growing household was largest in Same (0.37 ha), Rombo (0.31 ha), Mwanga (0.29 ha), Moshi rural (0.20 ha), and Hai (0.13 ha). (Chart 3.29).



3.3.5.2 Irish Potatoes

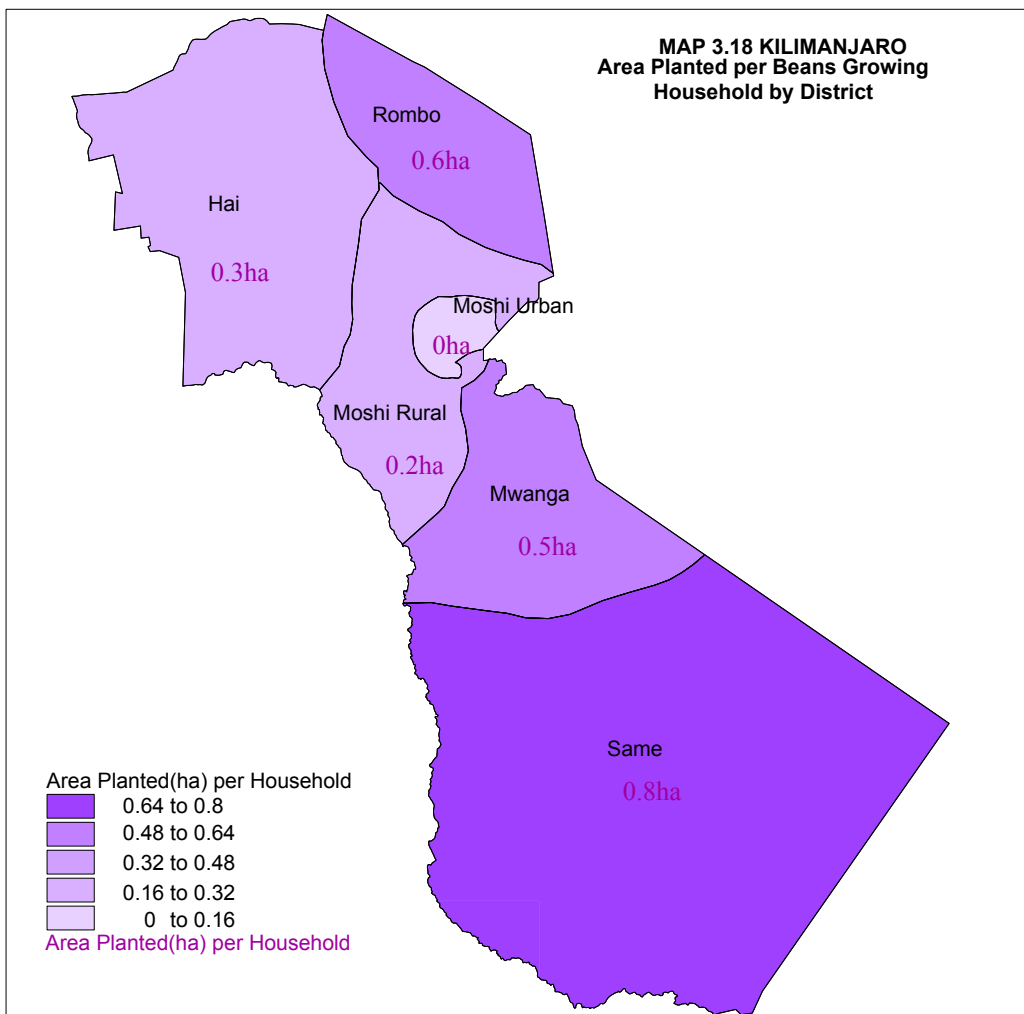
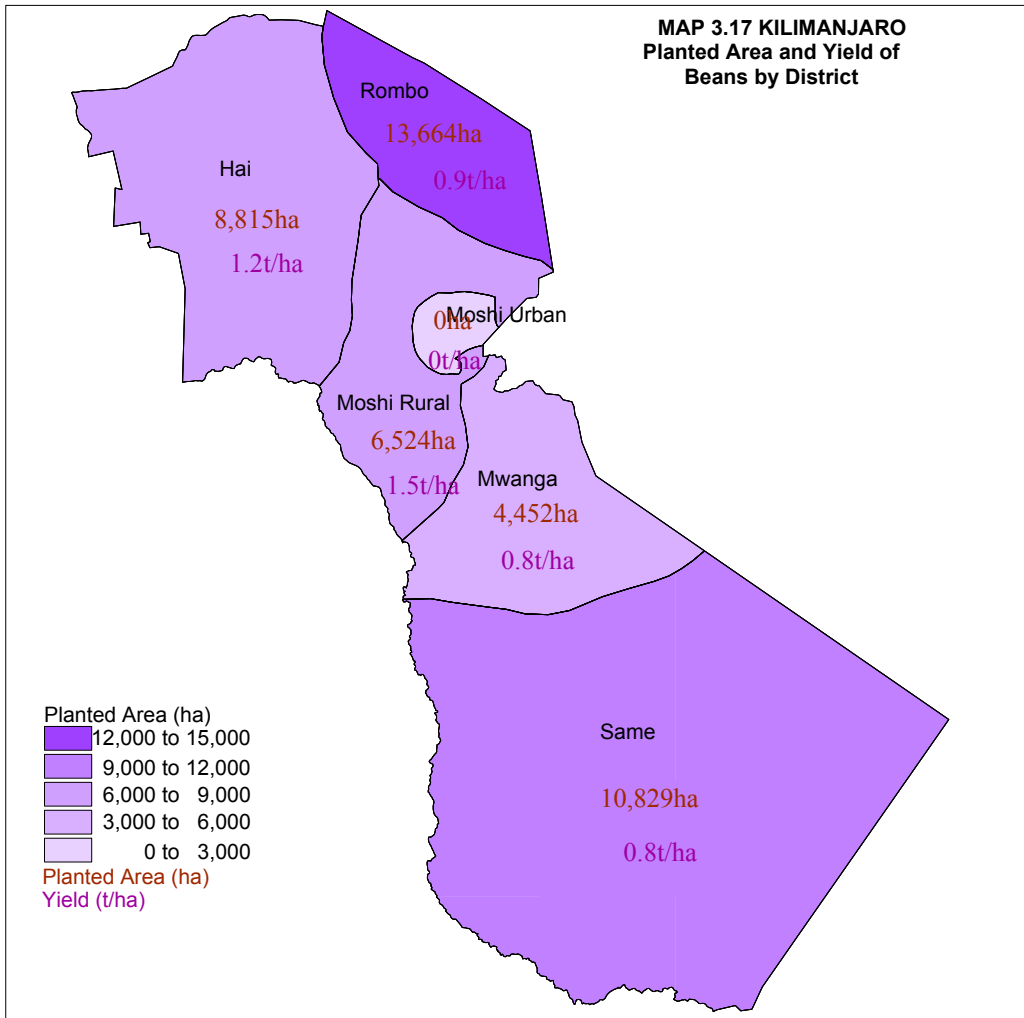
The number of households growing irish potatoes in Kilimanjaro region was 4,484 and 2,823 during short and long rainy seasons. This was 32% of the total root and tuber crop growing households during both seasons. The total production of irish potatoes during the census year was 15,592 tonnes from a planted area of 3,016 hectares resulting in a yield of 5.1t/ha.

Hai district has the largest planted area for irish potatoes (2,391 ha, 79.5%), followed by Same (336 ha, 11.1%), Rombo (265 ha 8.8%) and Moshi rural (17 ha, 0.5%) (Chart 3.31 and Map 3.19).



3.3.6 Pulse Crops Production:

The total area planted with pulses was 46,949 hectares out of which 44,283 ha were planted with beans (94 percent of the total area planted with pulses), other pulse crops were of minor importance in terms of area planted,

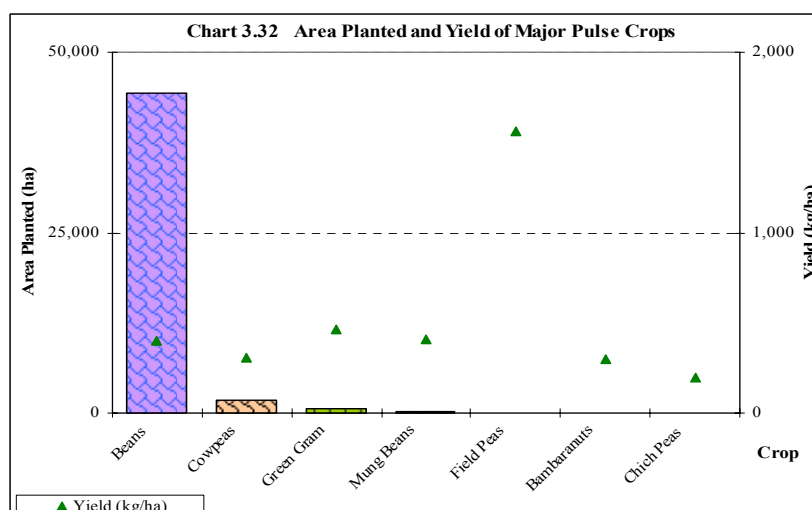


The area planted with pulses in the long rainy season was 28,590 ha which represented 61 percent of total area planted with pulses during the year. Beans was the most dominant pulse crop during long rainy season with 27,262 ha (94.6 % of the total area planted with pulses in that particular season), followed by cowpeas 1,004 ha, (3.5%) green gram 260 ha, (0.9%), mung beans 233 ha, (0.8%), and field peas 30 ha (0.1%).

Table 3.4: Area, Quantity Harvested and Yield of Pulses by Season

Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Beans	17,221	6,918	402	27,062	10,704	396	44,283	17,622	398
Cowpeas	814	325	399	1,004	237	236	1,818	562	309
Green Gram	308	169	549	260	92	354	568	261	460
Field Peas	4	2	500	30	51	1,700	34	53	1,559
Mung Beans	13	2	154	233	99	425	246	101	411
TOTAL	18,360	7,416		28,589	11,183		46,949	18,599	

The total production of pulses was 18,599 tonnes. Beans production constituted 94.8 percent of the total pulse production. It was followed by cowpeas (561t, 3.0%), green grams (261t, 1.4%), and mung beans (101t, 0.5%) (Chart 3.32).



3.3.6.1 Beans

Beans dominated the production of pulse crops in the region. The number of households growing beans in Kilimanjaro region in the long and short rainy seasons was 103,410 and 73,082 respectively. The total production of beans in the region was 17,662 tonnes from a planted area of 77,486 hectares resulting in a yield of 0.4t/ha.

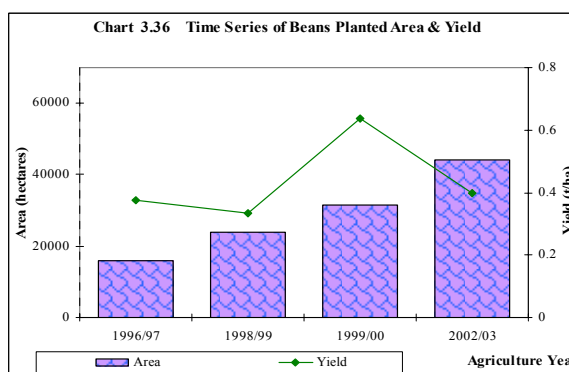
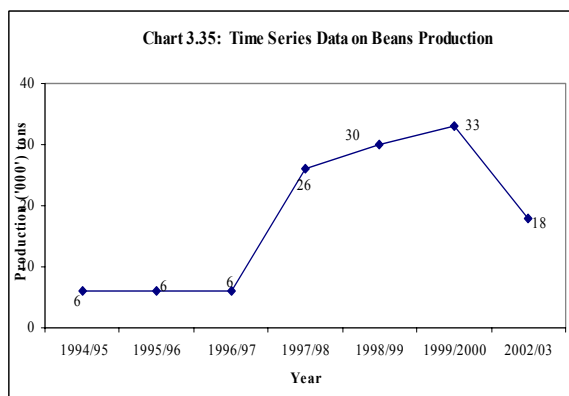
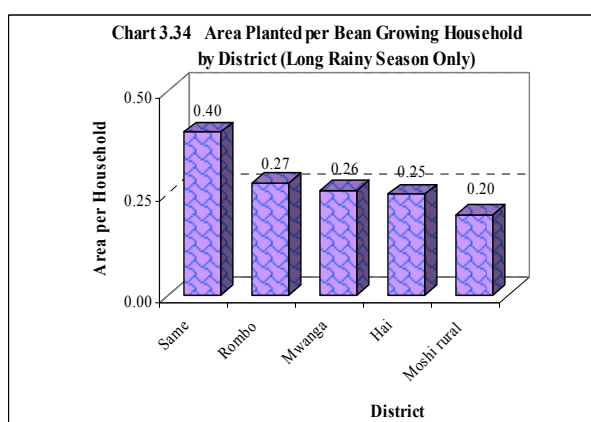
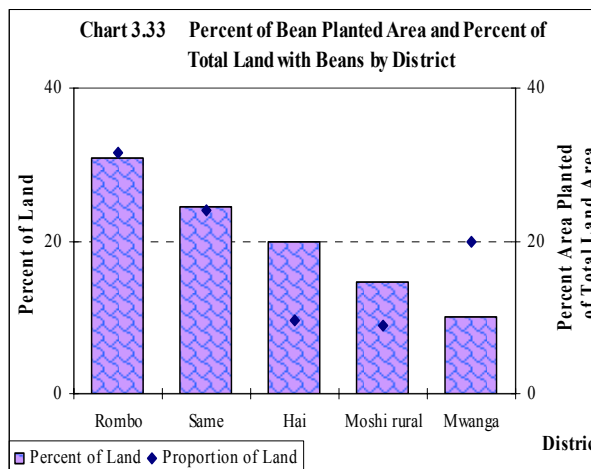
Rombo with 13,664 ha of beans had the second largest planted area in the region, followed by Same with 10,820 ha. (Chart 3.33). Same district had the largest area planted with beans per household (0.4 ha) (Chart 3.34).

The average area planted per household in the region during the long rainy season was 0.3 ha. The variations in area planted with beans per household among the districts were small ranging from 0.40 to 0.20 ha, (Chart 3.34 and Map 3.20)

In Kilimanjaro region, beans production has increased steadily over the period 1996/97 to 1999/00 from 6 tonnes in 1996 to 33 tonnes in 2000 but thereafter it started dropping and by year 2003 dropped to 18 tonnes (Chart 3.35).

Chart 3.36 shows the combined of planted area and production of beans from the year 1997 to the year 2003.

From 1997 to 2003 the area planted increased dramatically, the survey a result shows that the production of beans has been fluctuating over the years 1997 to 2002/03.



3.3.7 Oil Seed Production

The total production of oilseed crops was 5,279 tonnes planted on an area of 9,800 hectares. The total planted area of oilseeds during the long rainy season was 5,357 ha representing 54.7 percent of the total area planted with oil seeds.

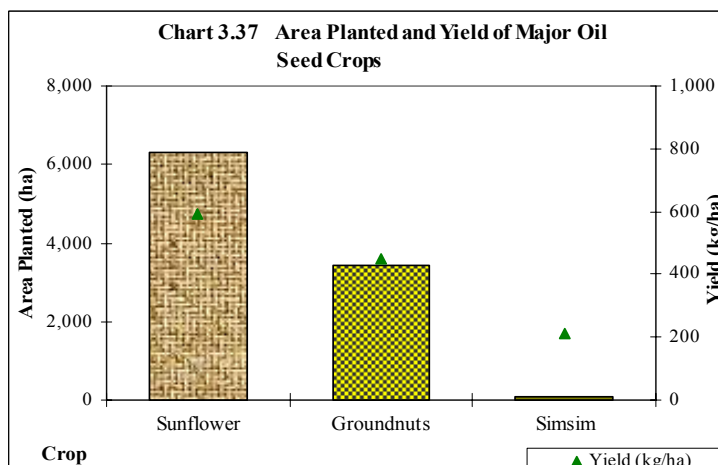
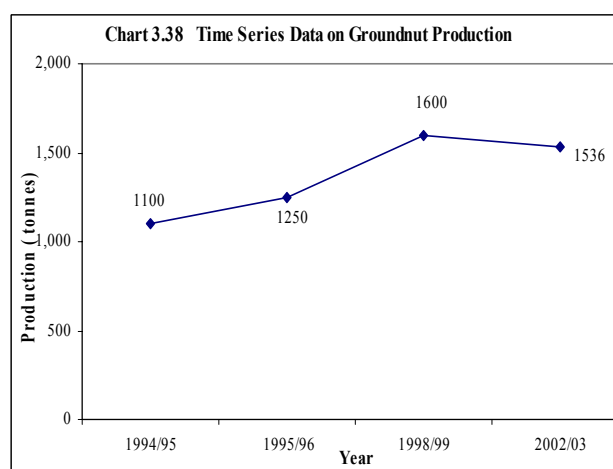


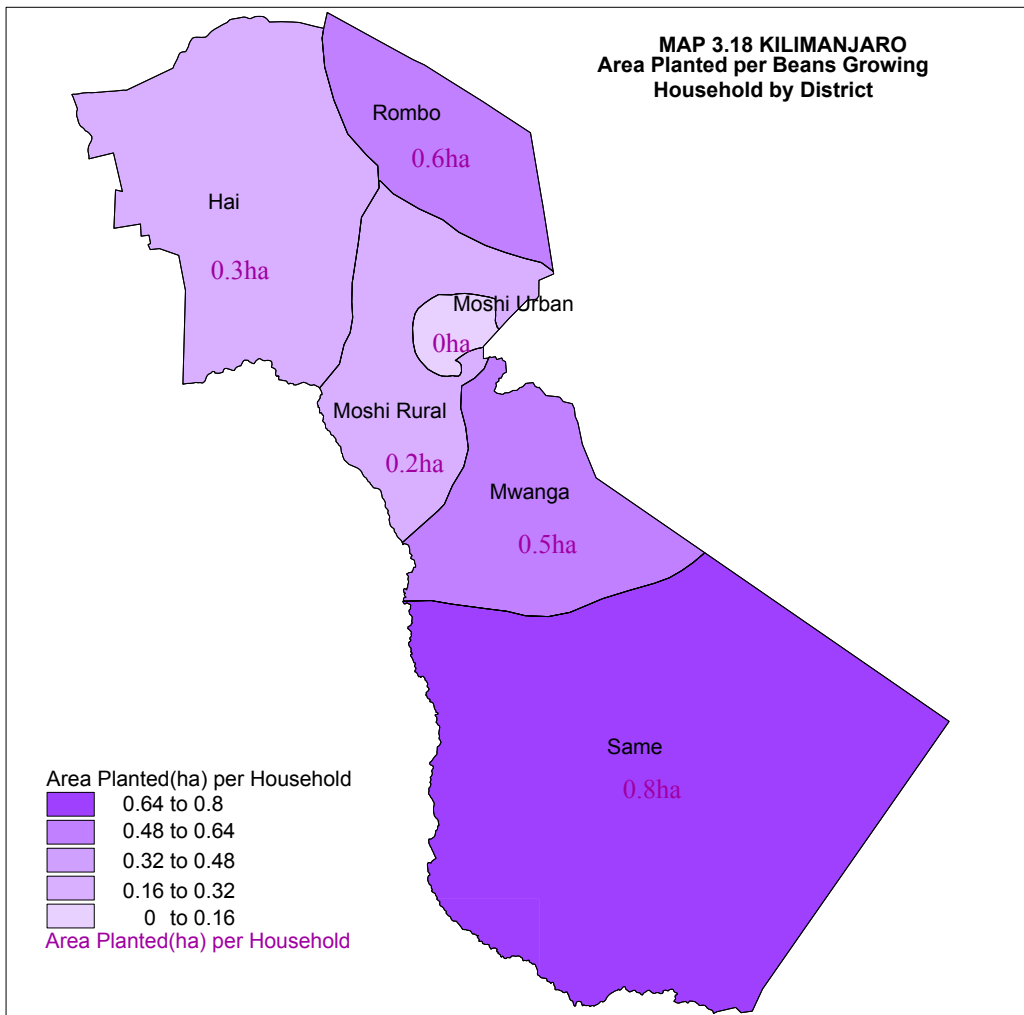
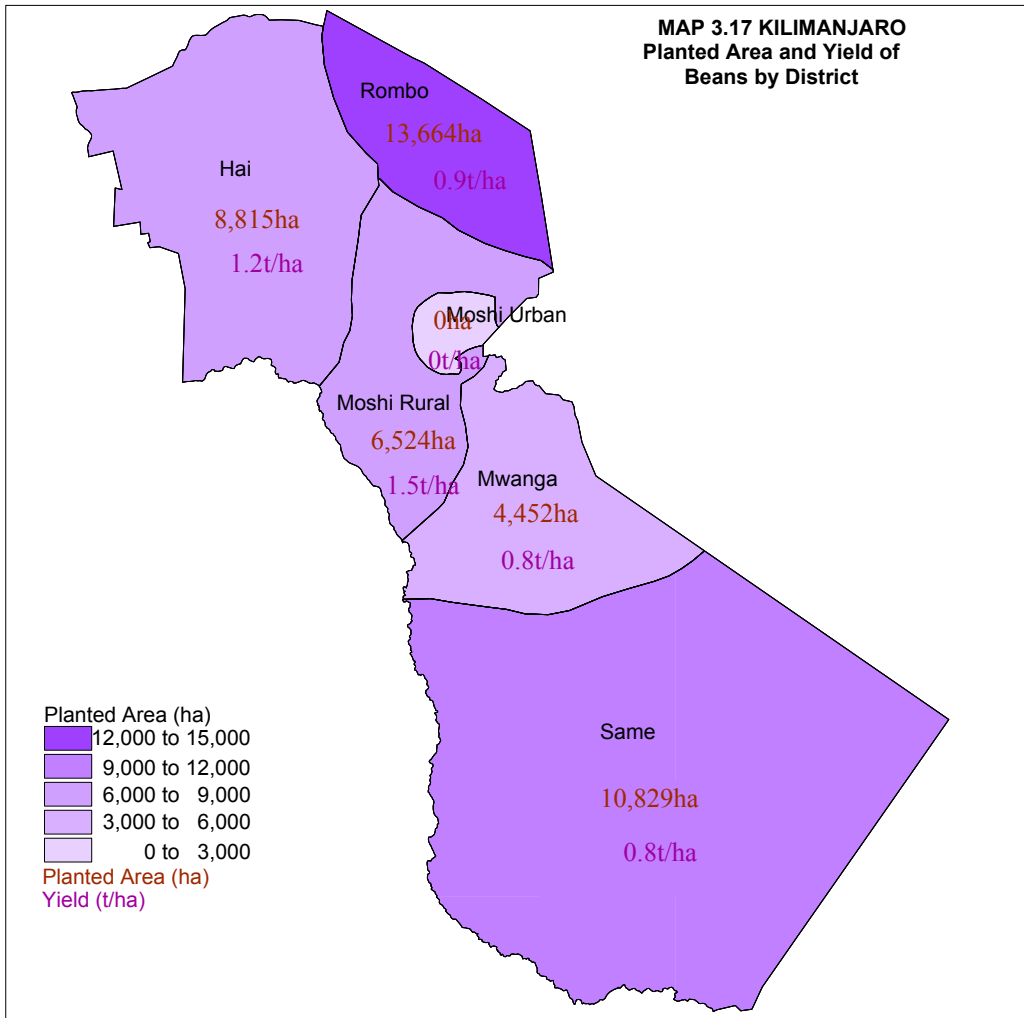
Table 3.5: Area, Quantity Harvested and Yield of Oil Seed Crops by Season

Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Sunflower	2,955	1,445	489	3,338	2,279	0	6,293	3,724	2,964
Simsim	14	0	0	80	19	625	94	19	625
Groundnuts	1,474	528	358	1,939	1,008	422	3,413	1,536	404
TOTAL	4,443	1,973		5,357	3,306		9,800	5,279	

The sunflower was the most important oilseed crop with 6,293 ha (54.6 % of the total area planted with oil seeds), followed by groundnuts (3,413 ha, 34.8%) and simsim (94 ha, 0.9 %). (Table 3.5) The yield for simsim was 1057 kg/ha. The yield for ground nuts was 761 kg/ha and the yield for sunflower was 519 kg/ha (Chart 3.37).

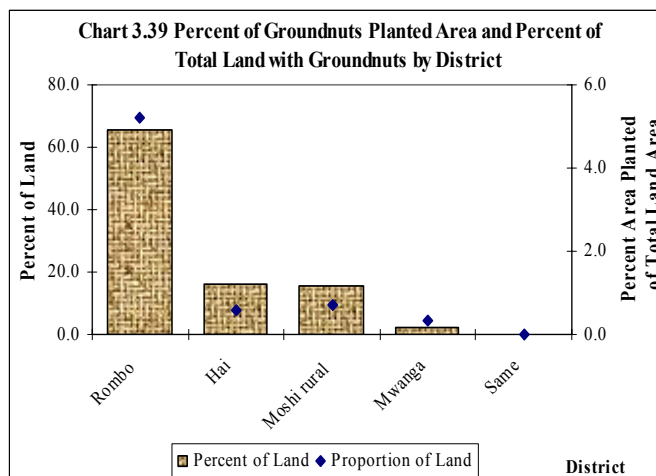
Chart 3.38 gives Groundnuts production trend (in thousand metric tonnes for the combined long and short rainy seasons). There was a continuous increase in groundnuts production over the four year period from 1995 to 1998/99 followed by a drop in production from 1600 tonnes to 1534 tonnes



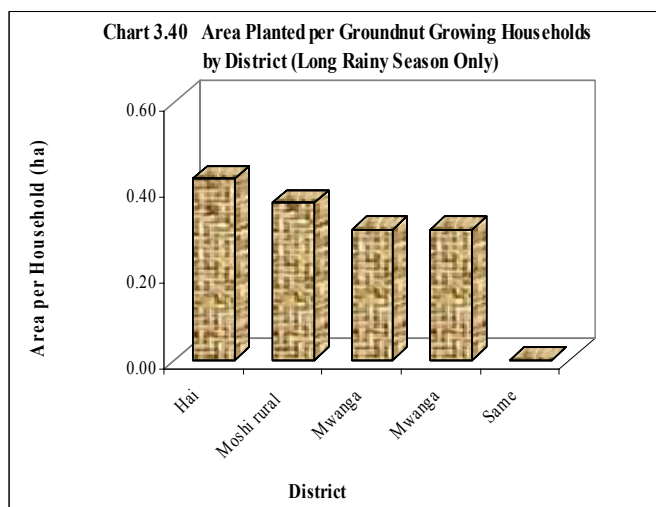


3.3.7.1 Groundnuts

The district with the largest groundnuts planted area was Rombo with 2,260 hectares (66.2 percent of the total area planted with groundnuts in the region) followed by Hai (551 ha, 16.1%), Moshi rural (529 ha, 15.5%) and Same district have not reported grown of groundnuts (Chart 3.39 and Map 3.21).



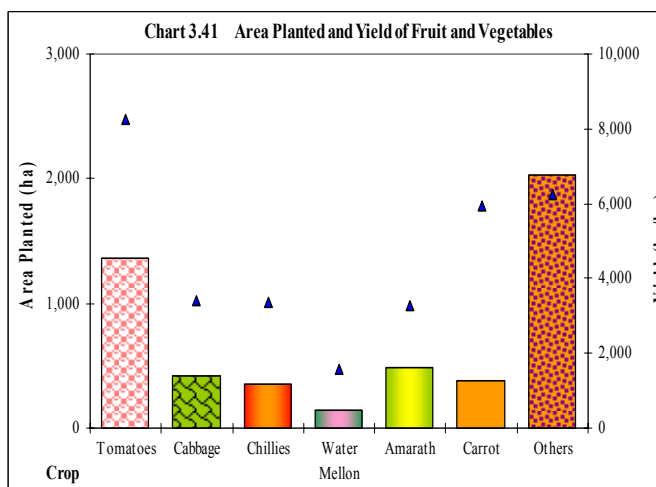
The largest area planted per groundnut growing household was found in Hai (0.42 ha), followed by Moshi rural (0.37 ha), Mwanga (0.30 ha and Same district were not reported.



The range between the district with the highest and the lowest area planted per household depicts small variations in area planted among the districts (Chart 3.40).

3.3.8 Fruits and Vegetables

The collection of fruits and vegetables production data was difficult due to the small quantities produced per household. Most of the data presented here gives the production of smallholders who grew these crops as cash crops and not merely for household consumption.



Most fruit production is from permanent crops and only water melon is reported as an annual crop in this section. Reliable historical data for time series analysis of fruits and vegetables are not available the

short rainy season is relatively important for fruits and vegetables production since 56 percent of the total area planted with fruits and vegetables was during the short rainy season. For tomatoes, onion, cabbage, water mellon, ginger, and pumkins over 50 percent of the planted area was during the short rainy season.

The total production of fruits and vegetables was 19,550 tonnes. The most cultivated fruit and vegetable crop was tomatoe with a production of 11,221 tonnes (57.4% of the total fruits and vegetables produced) followed by onion (2,751t, 14.1%), amaranth (1581t, 8.1%), cabbage (1,425t, 7.2%) production of the other fruits and vegetables crops was relatively small (Table 3.6).

The yield of tomatoes was 8,233 kg/ha, onion (7,997 kg/ha), carrot (5,940 kg/ha) and cucumber (5,500 kg/ha). (Chart 3.42 and Map 3.22).

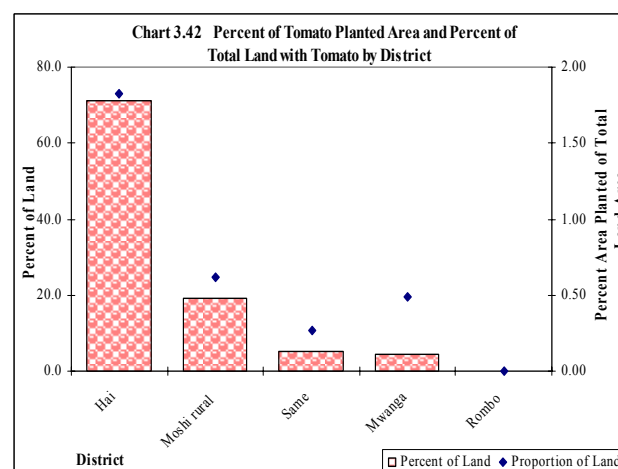
Table 3.6: Area, Production and Yield of Fruits and Vegetables by Season

Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
Okra	14	57	4,071	0	0	0	14	57	4,071
Radish	0	0	0	0	0	0	0	0	0
Bitter									
Aubergine	0	0	0	4	2	500	4	2	500
Onions	206	1,255	6,092	138	1,496	10,841	344	2,751	7,997
Ginger	464	1,453	3,131	4	0	0	468	1,453	3,105
Cabbage	91	445	4,890	326	980	3,006	417	1,425	3,417
Tomatoes	882	5,971	6,770	481	5,250	10,915	1,363	11,221	8,233
Spinach	127	154	1,213	156	327	2,096	283	481	1,700
Carrot	220	1,148	5,218	163	1,127	6,914	383	2,275	5,940
Chillies	144	431	2,993	208	750	3,606	352	1,181	3,355
Amaranths	265	1,131	4,268	215	450	2,093	480	1,581	3,294
Pumpkins	23	10	435	5	0	0	28	10	357
Cucumber	39	228	5,846	41	212	5,171	80	440	5,500
Egg Plant	18	83	4,611	0	0	0	18	83	4,611
Water Mellon	50	100	2,000	96	129	1,344	146	229	1,568
Total	2,821	10,723		2,525	8,827		5,346	19,550	

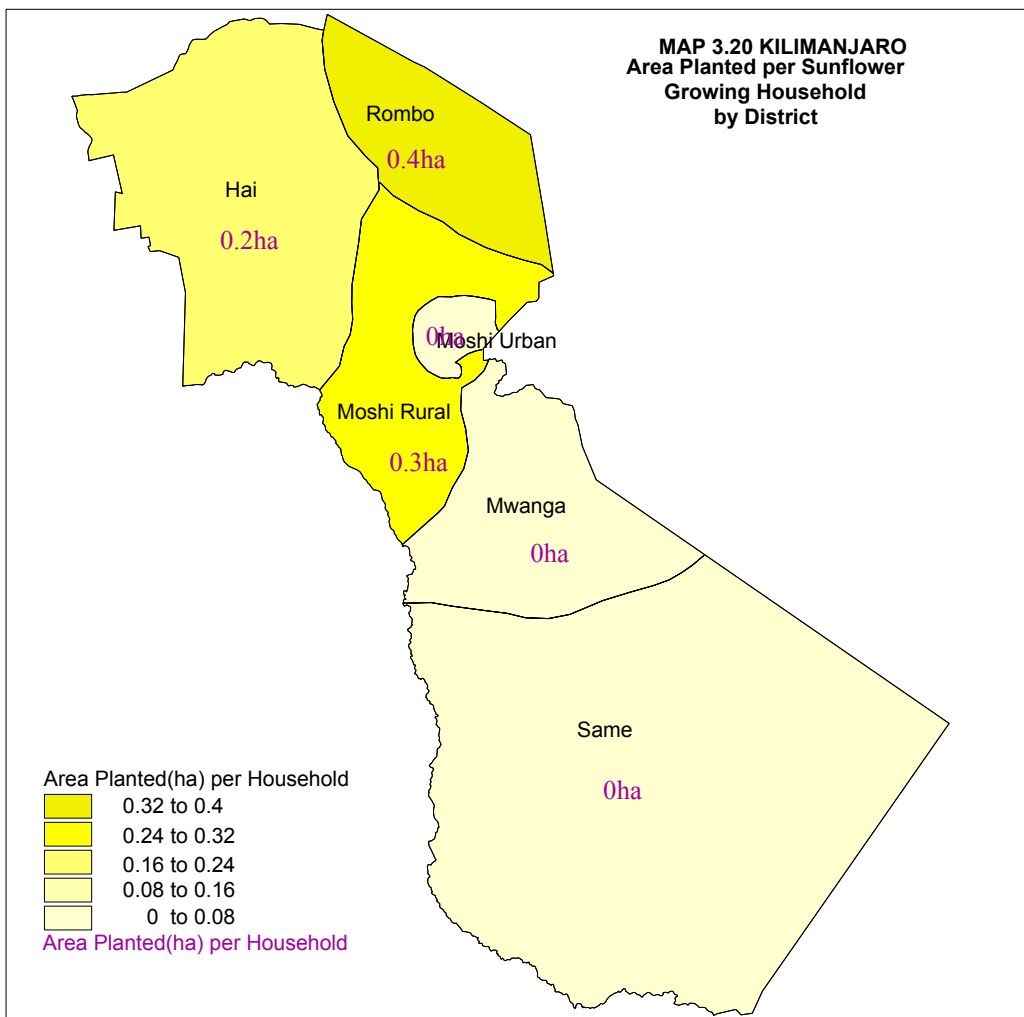
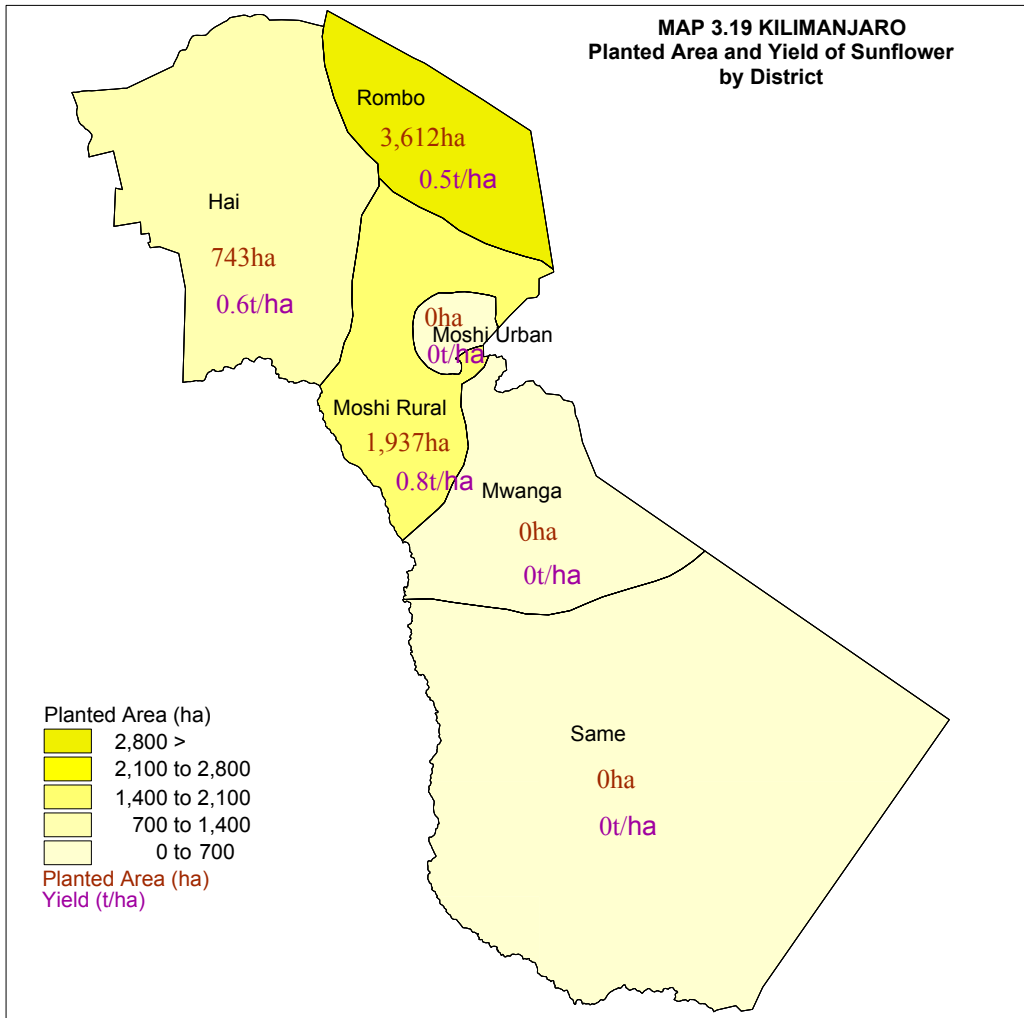
3.3.8.1 Tomatoes

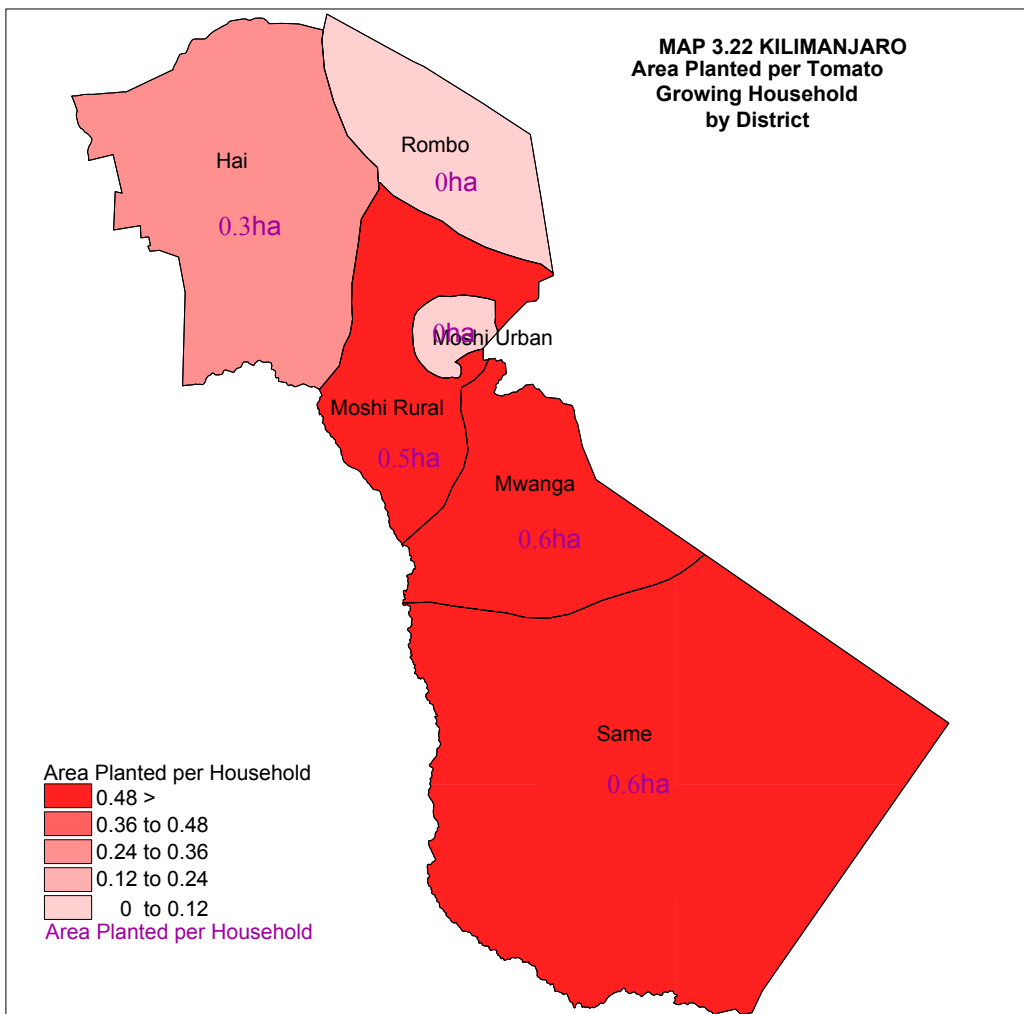
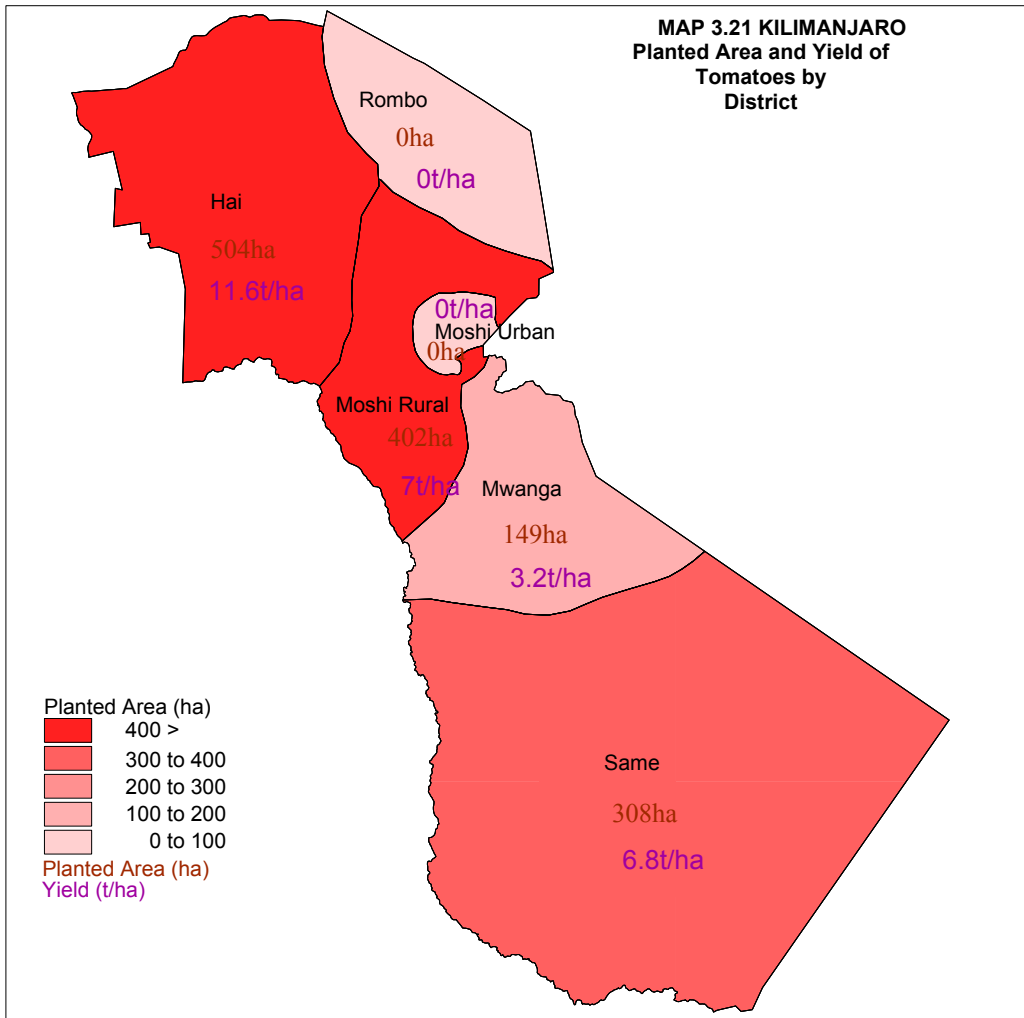
The number of households growing tomatoes in the region during the long rainy season was 2,989 and in the short rainy season the number was 5012. This represented 2.8 percent of the total crop growing households in the region during the long rainy season and 7.2 percent during the short rainy season.

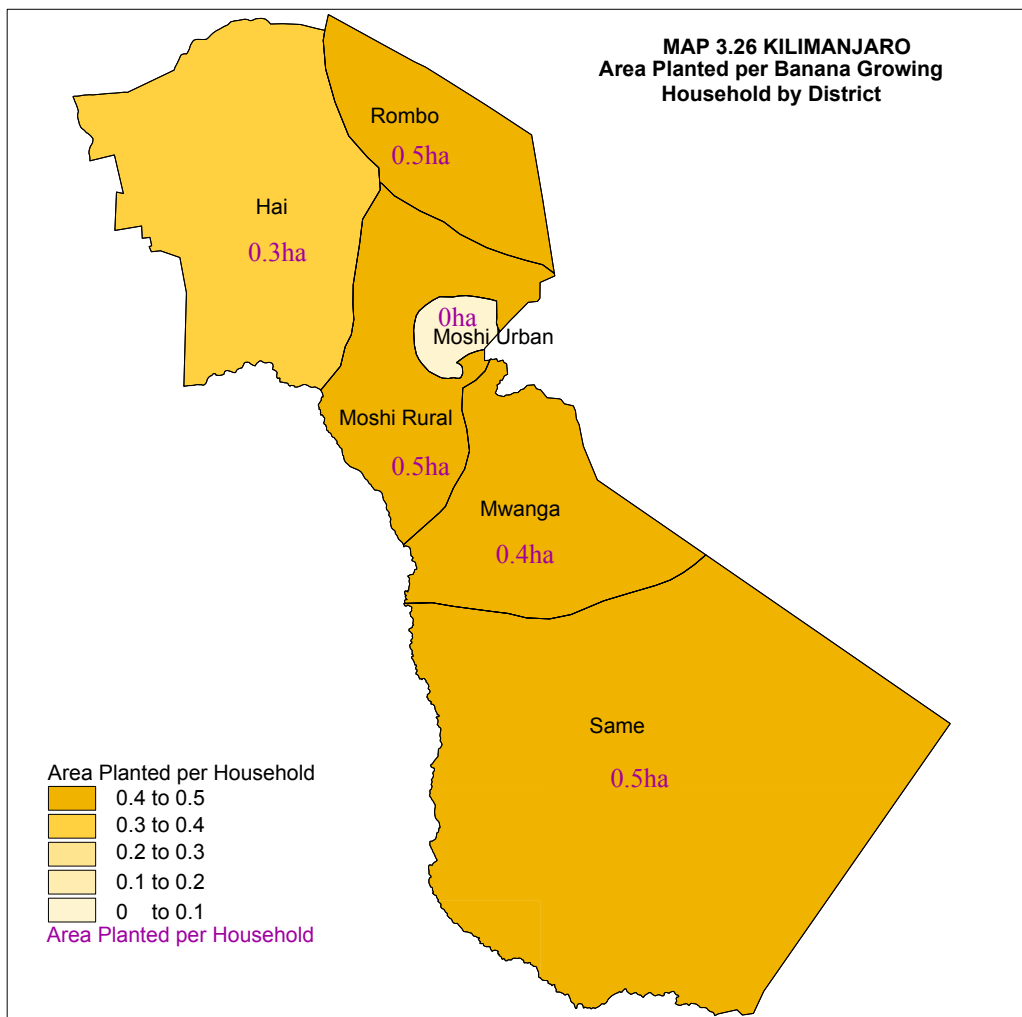
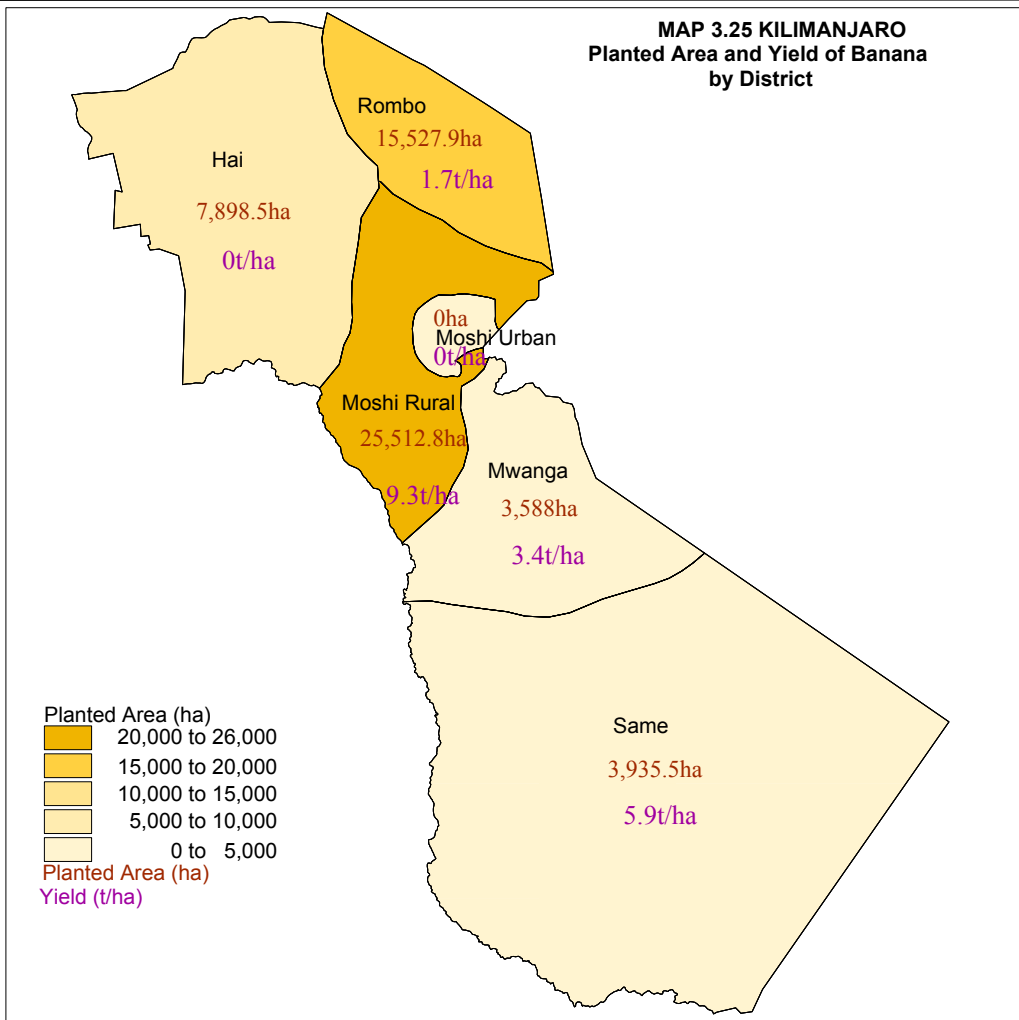
Hai district had the largest planted area of tomatoes (1680 ha, 45.4% of the total area planted with tomatoes in the region), followed by Moshi rural (456 ha, 25.6%), Same (120 ha, 5.1%), Mwanaga (108 ha, 4.1%) and Rombo district have very small planted



The highest proportion of land with tomatoes was found in Hai followed by Moshi rural, Mwanaga district, the remaining of the district had relatively low percentage of land used for tomato production (Chart 3.42).







The largest area planted per tomato growing household during short rainy season was found in Hai and Moshi districts (0.17

ha) followed by Mwanga (0.15 ha) and Same (0.13 ha) (Chart 3.43) and Map 3.23).

The total area planted with tomatoes accounted for 0.8 percent of the total area planted with annual crops and vegetables during the census year.

3.3.8.2 Cabbage

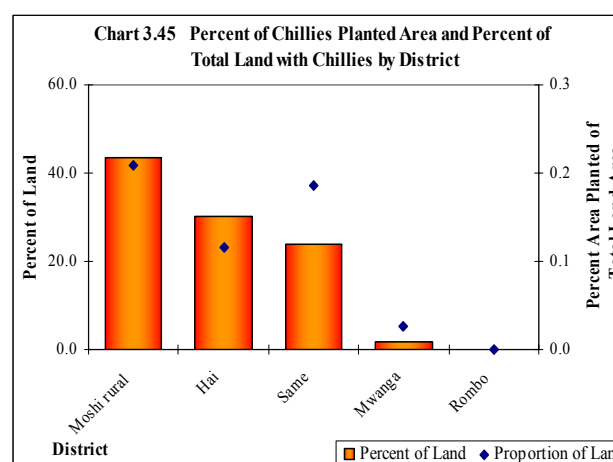
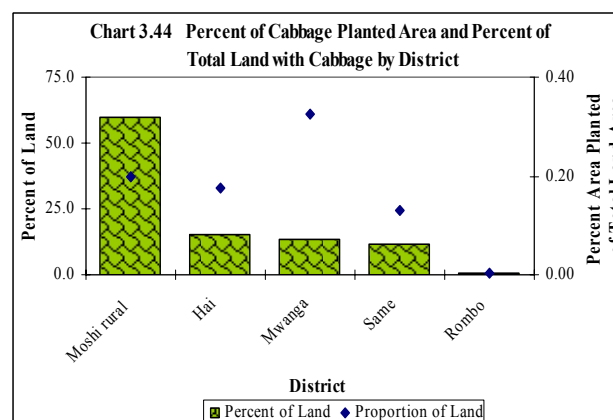
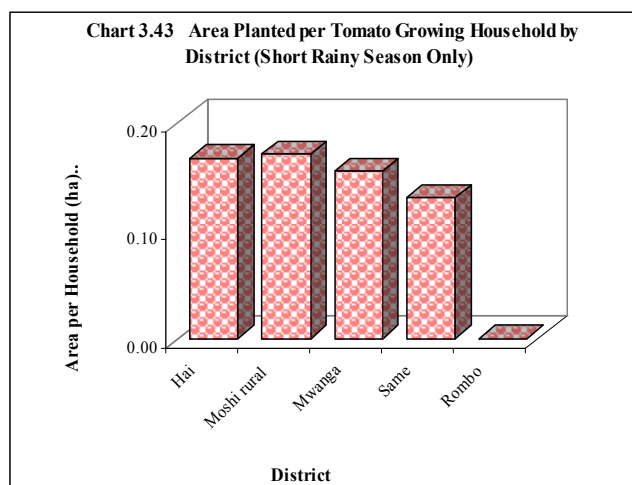
The number of households growing cabbages in the region during the long rainy season was 2,645 and 808 in the short rainy season. This represented 2.5 percent of the total crop growing households in the region in the long rainy season and 1.2 percent in the short rainy season.

Moshi rural district had the largest planted area of cabbage (250 ha, 59.8% of the total area planted with cabbage in the region), followed by Hai (63 ha, 15.1%), Mwanga (55 ha, 13.2%), Same (48 ha, 11.5%) and Rombo (2 ha, 0.5%). (Chart 3.44 and Map 3.24).

The total area planted with cabbages accounted for 0.2 percent of the total area planted with annual crops and vegetables during the short and long rainy seasons.

3.3.8.3 Chillies

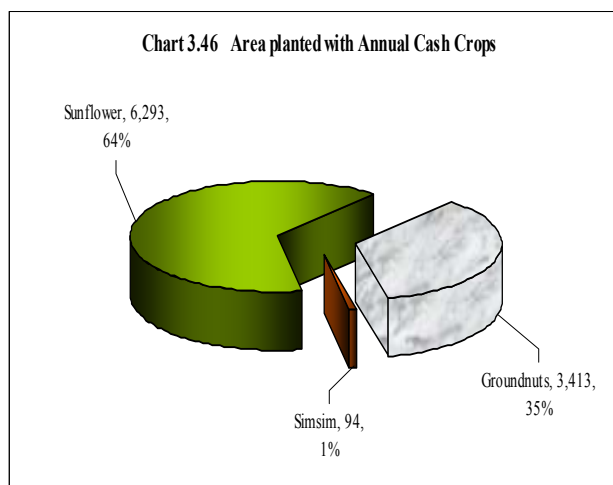
The number of households growing chillies in the region during both the long and short rainy season was 867. This represented 0.8 percent of the total crop growing households in the region. Moshi rural district had the largest planted area of chilly (154 ha, 43.6% of the total area planted with cabbage in the region), followed by Hai (107 ha, 30.3%), Same (84 ha, 23.8%) and Mwanga (6 ha, 1.7%) and chillies were not reported in Rombo district. (Chart 3.45 and Map 3.24). Moshi rural and Same had largest proportion of the area planted with chillies (0.2) and Hai (0.1). (Chart 3.45), the total area planted with chillies



accounted for 0.2 percent of the total area planted with annual crops and vegetables during the short and long rainy seasons.

3.3.9 Other Annual Crop Production

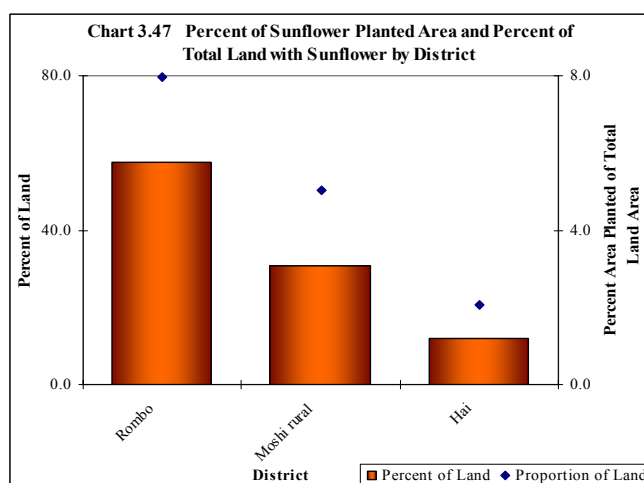
Most of the other annual crops are cash crops. An area of 9,800 ha was planted with other annual crops and sunflower was the most prominent followed by groundnuts and simsim. The area planted with sunflower was 6293 ha which represented 62.3 percent of the total area planted with annual cash crops in short and long rainy season.



3.3.9.1 Sunflower

Only 3,724 tonnes of sunflower were produced in Kilimanjaro Region on a planted area of 6,293 ha. Most of it was produced during the long rainy season. The crop only grown in Rombo and Moshi rural districts and Hai,

Sunflower had a planted area of 843 ha, most of which was planted in the long rainy season. Sunflower production was concentrated in 3 districts with Rombo having the largest planted area (3,612 ha, 57.4% of total area planted with sunflower in the region), followed by Moshi rural (1,937 ha, 30.8%) and Hai (743, 11.8%). Same and Mwanga districts had no production of sunflower. (Chart 3.47 and Map 3.25).



3.4 Permanent Crops

Permanent crops (sometimes referred as perennial crops) are crops that normally take over a year to mature and once mature they can be harvested for a number of years. For most crops, it is easy to determine if they are annual or permanent. However, for crops like cassava and bananas the distinction is not so clear. Cassava has varieties that mature within a year and produce only one harvest, whilst other varieties survive for more than one year and produce several harvests. In this census, cassava was treated as an annual crop. Conversely, bananas normally take less than a year to mature, survive for more than one year and are thus treated as a permanent crop. In this report the agriculture census results are

presented for the most important permanent crops in terms of planted area, production and yield.

Previous censuses and surveys did not measure these variables for permanent crops, therefore no time series analysis is made in this section.

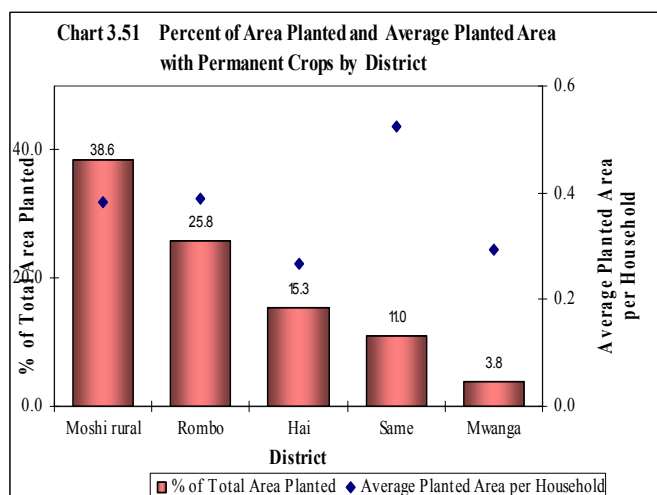
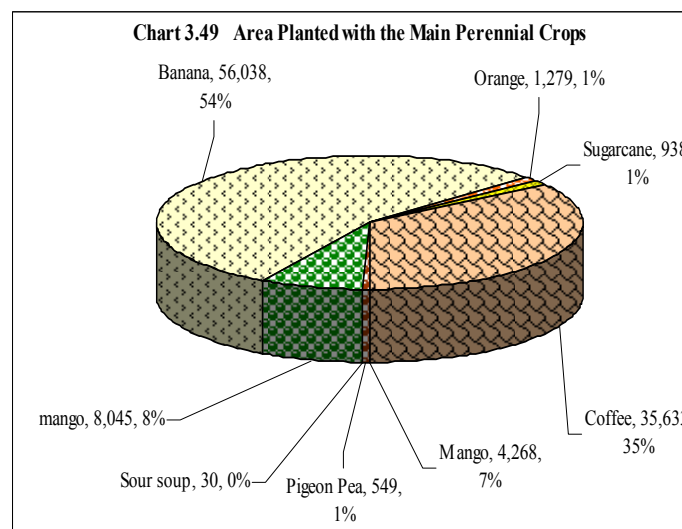
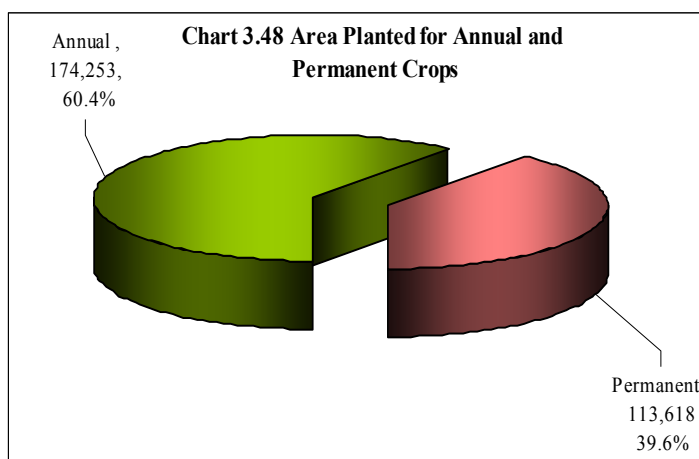
The area of smallholders planted with permanent crops was 113,618 hectares (14% of the area planted with annual crops in the region). However, the area planted with annual crops is not

the actual physical land area as it doubles counts the area planted more than once during the year, whilst the planted area for permanent crops is the same as physical land area. So the percentage of physical area planted with permanent crops may be higher than indicated in Chart 3.49.

The most important permanent crop in Kilimanjaro region was banana which had a planted area of 56,038 ha, (54.7% of the planted area of all permanent crops) followed by coffee (35,633 ha, 34.8%), mango (8,045 ha, 7.8%).

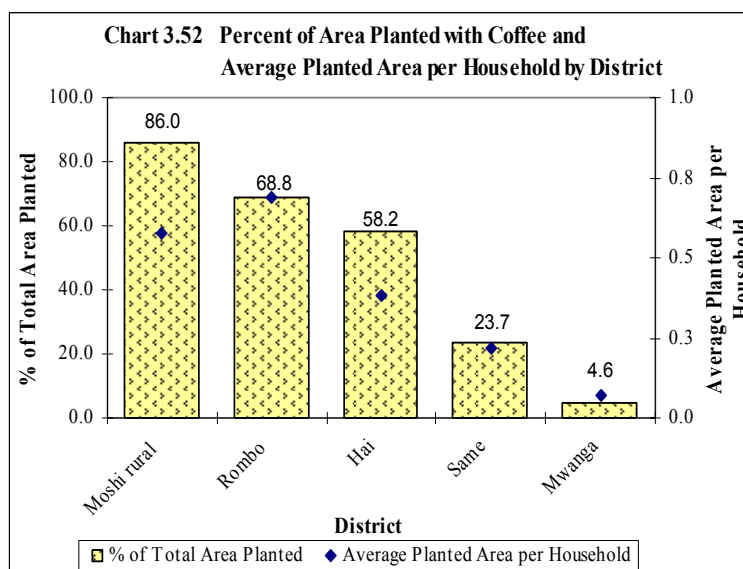
The remaining permanent crops collectively had a planted area of 2,801 ha (11.0%) (Chart 3.50 and Map 3.26 and 3.27).(Chart 3.49).

Moshi rural district had the largest area under smallholder permanent crops (46,429 ha, 40.9%), this was followed by Rombo (31031 ha, 27.3%), Hai (18,428 ha, 16.2%), Same (13,184 ha, 11.6%) and Mwanaga (4,547 ha, 4.0%), Same had the largest area per permanent crop growing household (0.5 ha) followed by Moshi rural and Rombo both had (0.4ha), Mwanaga and Hai both had (0.3ha). (Chart 3.50).



3.4.1 Coffee

The total production of coffee by smallholders was 394,758 tonnes. In terms of area planted, coffee was the second important permanent crop grown by smallholders in the region. They were grown by 91,290 households (26.3% of the total crop growing households). The average area planted with coffee per household was relatively small

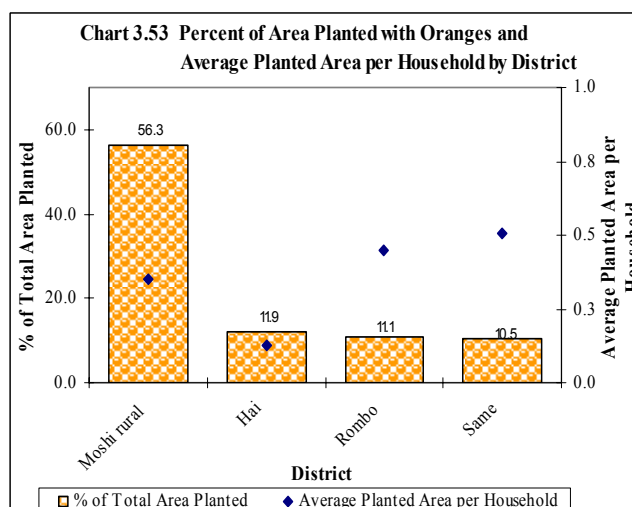


at around 0.4 ha per coffee growing households

Moshi rural had highest percentage in region region with (12,016 ha, 86%), followed by Rombo (10,165 ha, 69%), Hai (8,587 ha, 58%), There was small amount of coffee production in the remaining districts (Chart 3.52 and Map 3.28).

3.4.2 Oranges

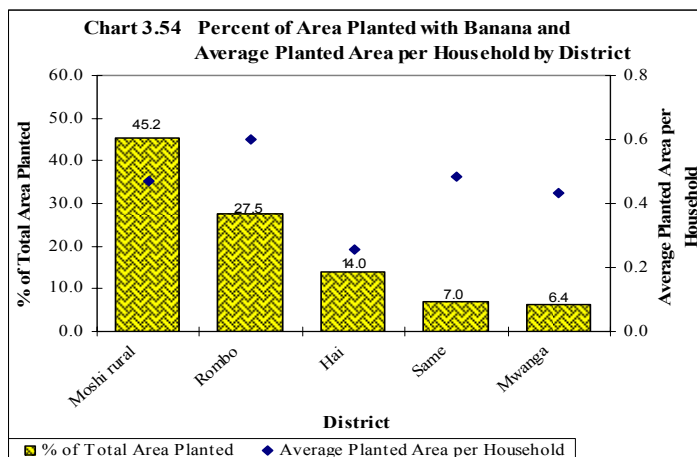
The total production of oranges by smallholders was 789 tonnes. In terms of area planted, orange was the seventh most important permanent crop grown by smallholders in the region. It was grown by 5,904 households (1.7% of the total crop growing households). The average area planted with oranges per household was relatively small at around 0.2 ha per orange growing household and the average yield obtained by smallholders was 1,284 kg/ha from a harvest area of 789 hectares.



Moshi rural had the largest area of oranges in the region (804 ha, 56.3%) followed by Hai (170 ha, 11.9%), Rombo (158 ha, 11.1%), Same (150 ha, 10.5%) and Mwanga had no production. The average area planted with oranges per orange planting household was highest in Same (0.5 ha) (Chart 3.53 and Map 3.29).

3.4.3 Banana

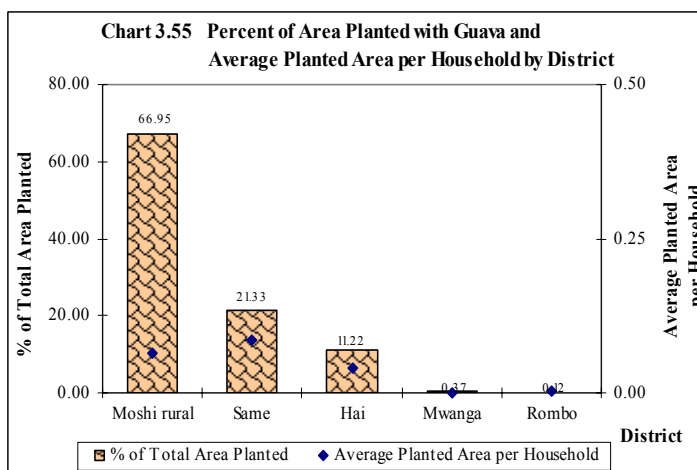
The total production of banana by smallholders was 327,080 tonnes. In terms of area planted, banana was the first most important permanent crop grown by smallholders in the region. It was grown by 145,279 households (41.9% of the total crop growing households). The average area planted with banana per household was relatively small at around 0.4 per banana growing household and the average yield obtained by smallholders was 579 kg/ha from a harvested area of 56,463 hectares.



Moshi rural had the largest planted area of bananas in the region (25,513 ha, 45.2%) followed by Rombo (15,528 ha, 27.5%), Hai (7,898 ha, 13.9%), Same (3,936 ha, 6.9%) and Mwangwa (3,588 ha, 6.4%). However, the area planted with banana per banana growing household was highest in Rombo (0.6 ha), followed by Same and Moshi rural (0.5 ha), Mwangwa (0.4 ha) and Hai (0.3 ha) (Chart 3.54 and Map 3.30).

3.4.4 Guava

In terms of area planted, guava was the sixth most important permanent crop grown by smallholders in the region. It was grown by 3,812 households (1.1% of the total crop growing households). The average area planted with pigeon pea per household was relatively small at around 0.01 ha per pigeon pea growing household.



Moshi rural had the largest planted area of guava in the region (545 ha, 66.9%) followed by Same (173 ha, 21.3%), Hai (91 ha, 11.2%), Mwangwa (3.0 ha, 0.4%), and Rombo (1.0 ha, 0.1%). (Chart 3.55 and Map 3.31)

3.5 Inputs/Implements Use

3.5.1 Methods of Land Clearing

and clearing is a common pre-tillage operation practiced by most farmers in the region. Land clearing is divided into two categories: bush clearing, which by definition implies either expansion into virgin areas or into areas which have been left fallow for a long period while the other category, which includes burning, hand slashing or tractor slashing, is normally an annual clearing exercise to remove vegetation growth from the previous season.

Hand slashing is the most widely used method used for land clear

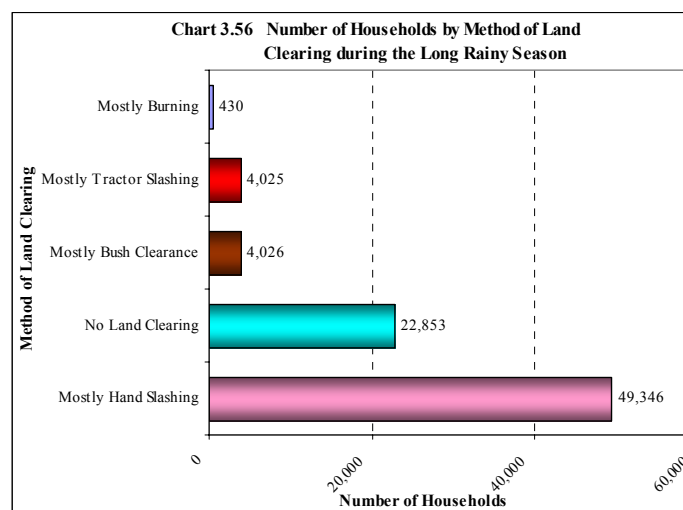
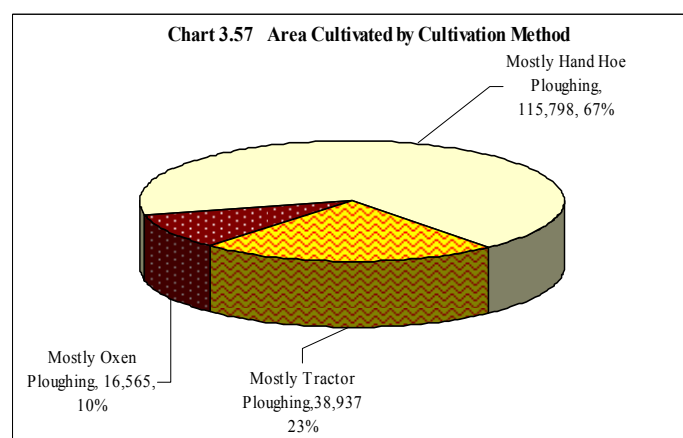


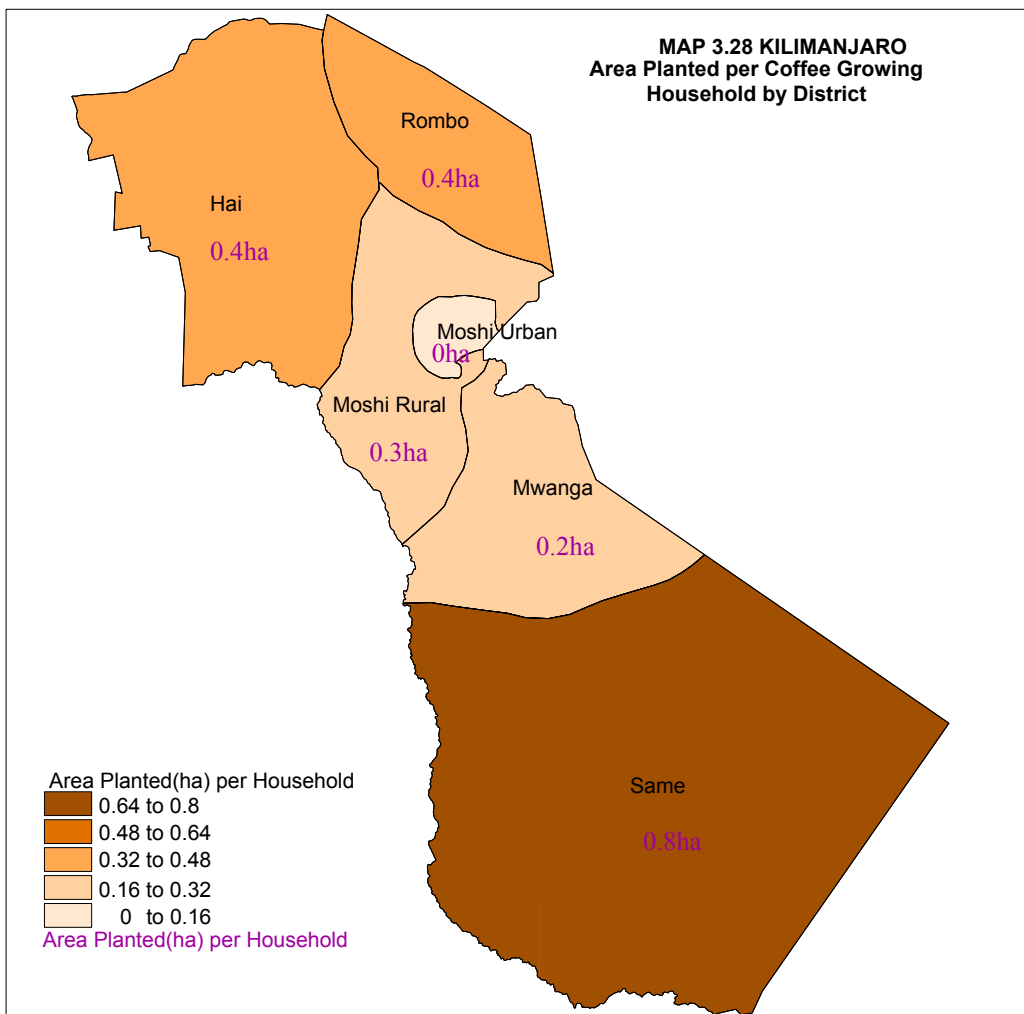
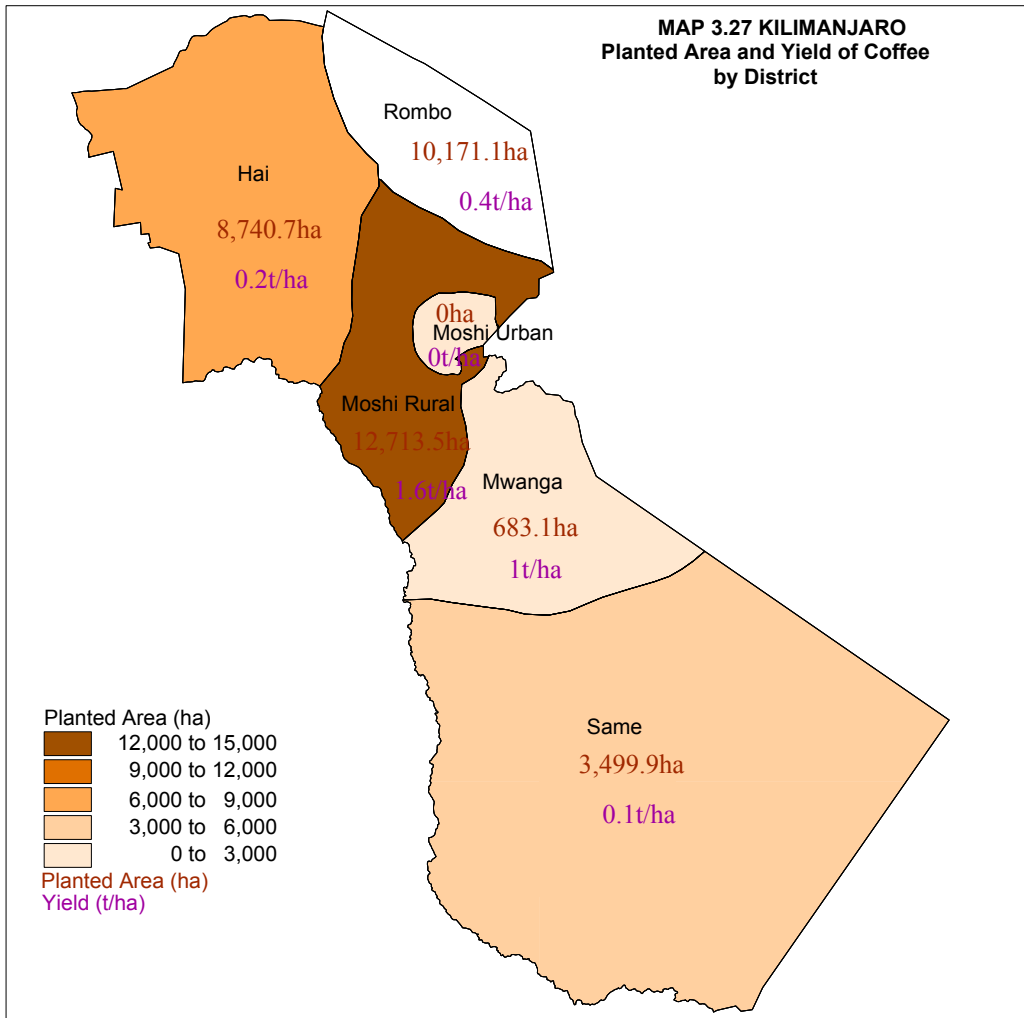
Table 3.8: Land Clearing Methods

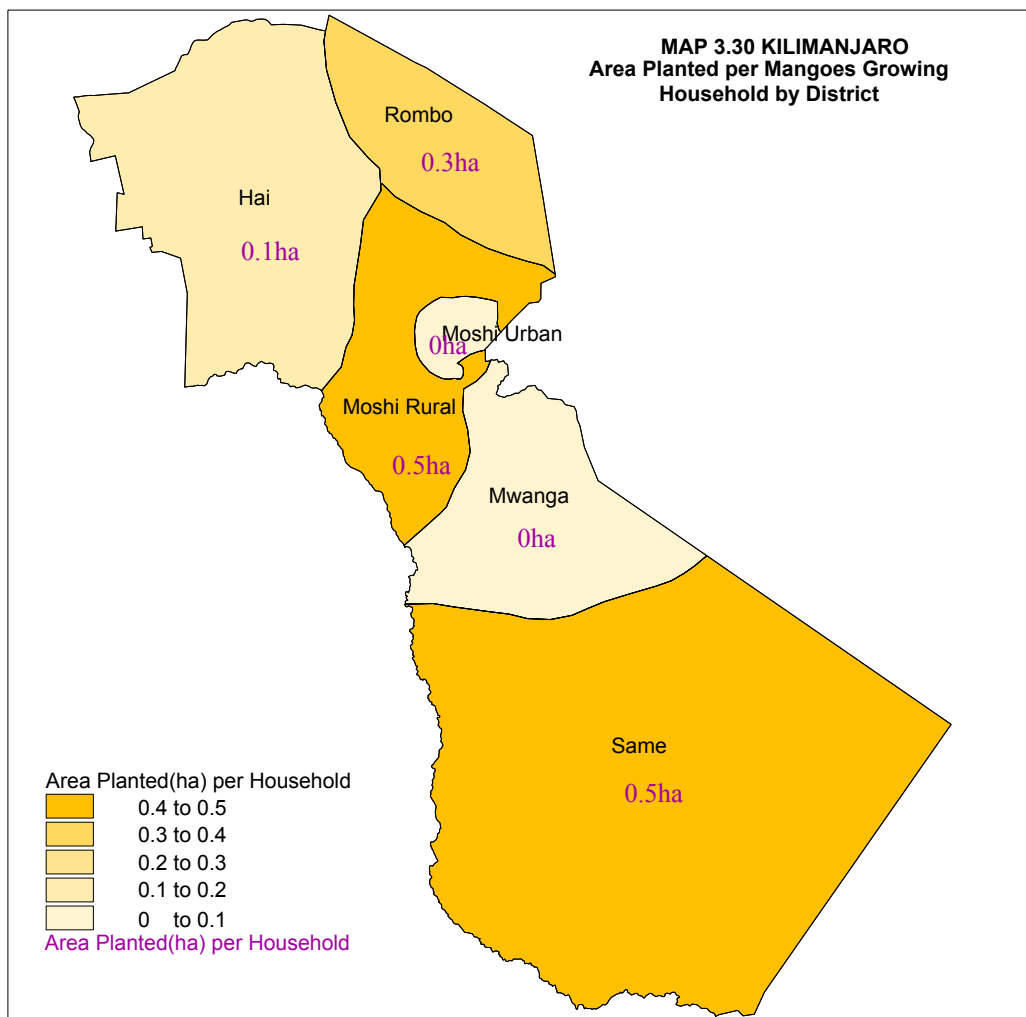
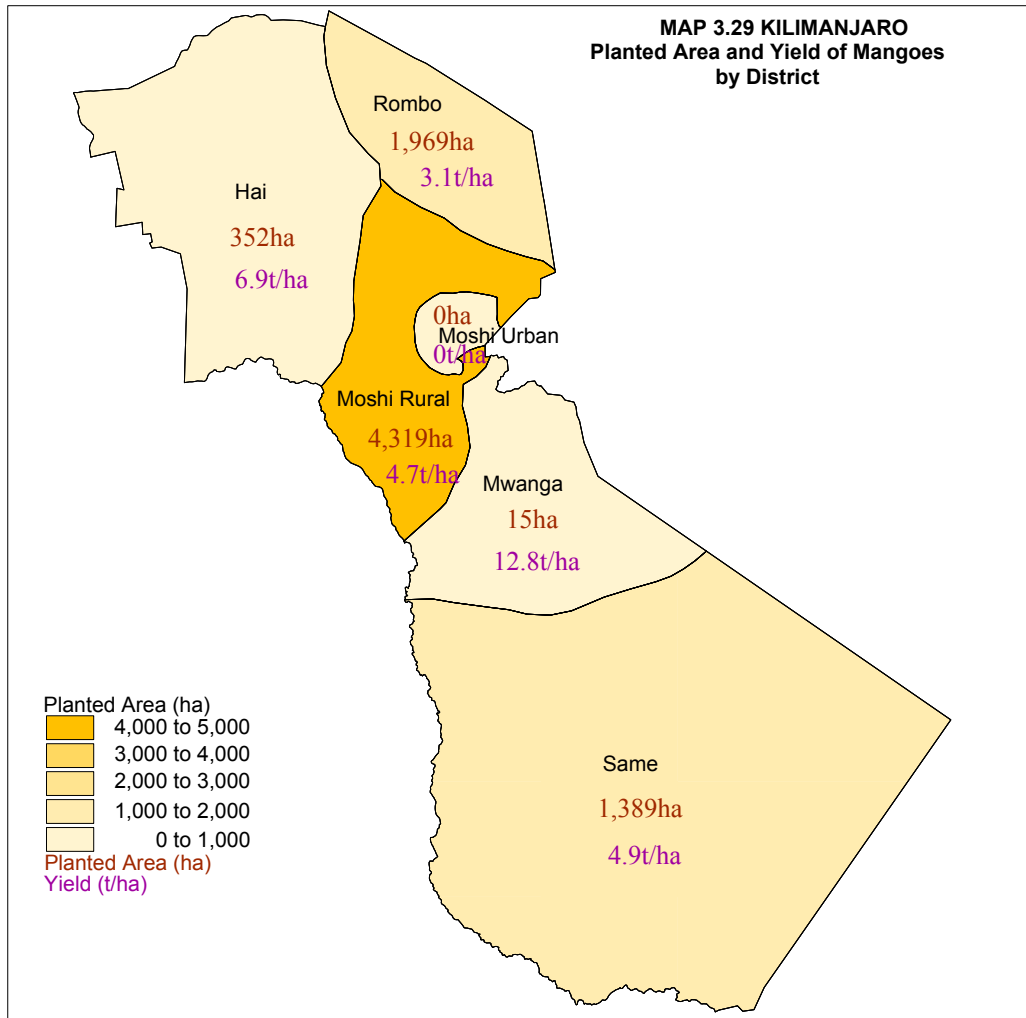
Method of Land Clearing	Long Rainy Season			Short Rainy Season			Total	
	Number of Households	Area Planted	%	Number of Households	Area Planted	%	Area Planted	%
Mostly Hand Slashing	137,556	46,192	56	111,020	36,447	44	82,639	100.0
No Land clearing	118,720	32,371	52	122,997	29,933	48	62304	100.0
Mostly Bush clearance	12,422	5,200	89	20,027	649	11	5,849	100.0
Mostly tractor slashing	7,914	3,448	96	1,173	152	4	3,600	100.0
Mostly Burning	568	412	70	109	179	30	591	100.0
Total	277,180	87,623	57	255,326	67,360	43	154,983	100.0

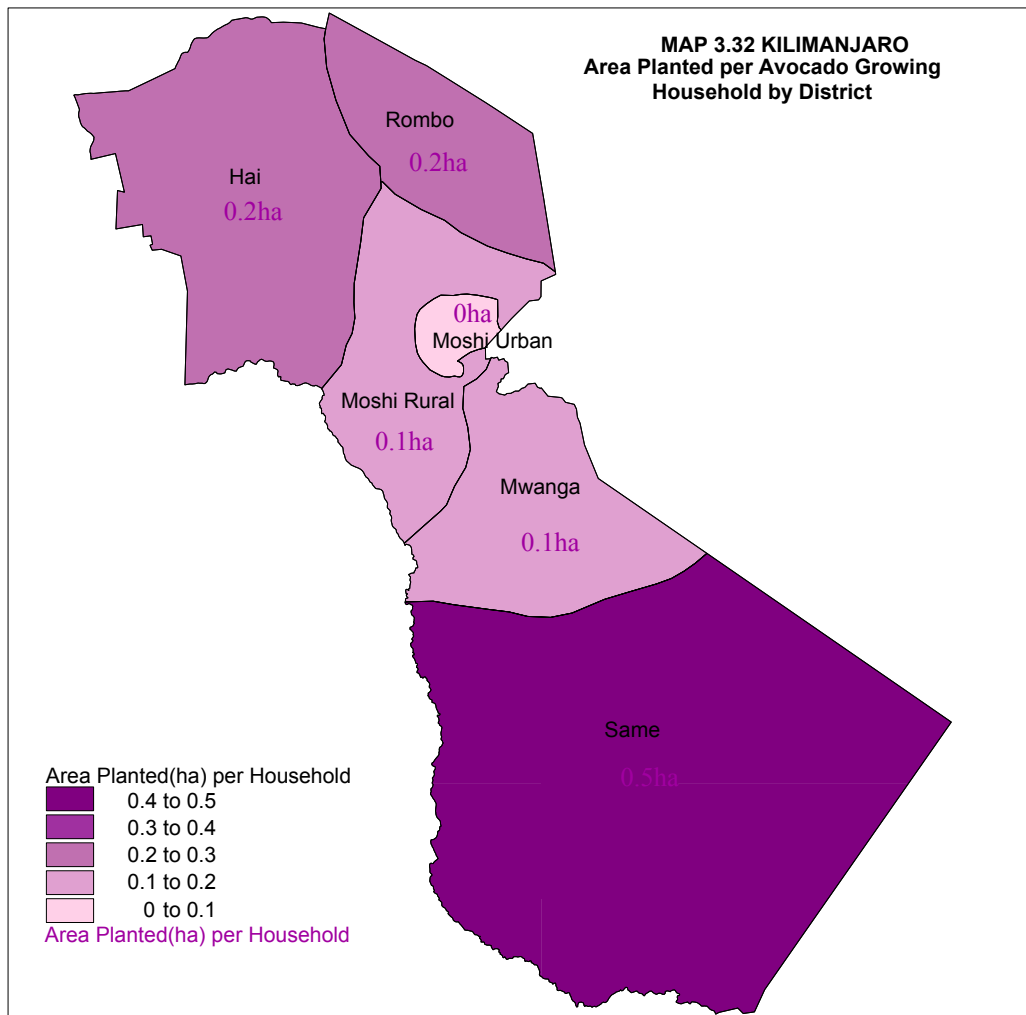
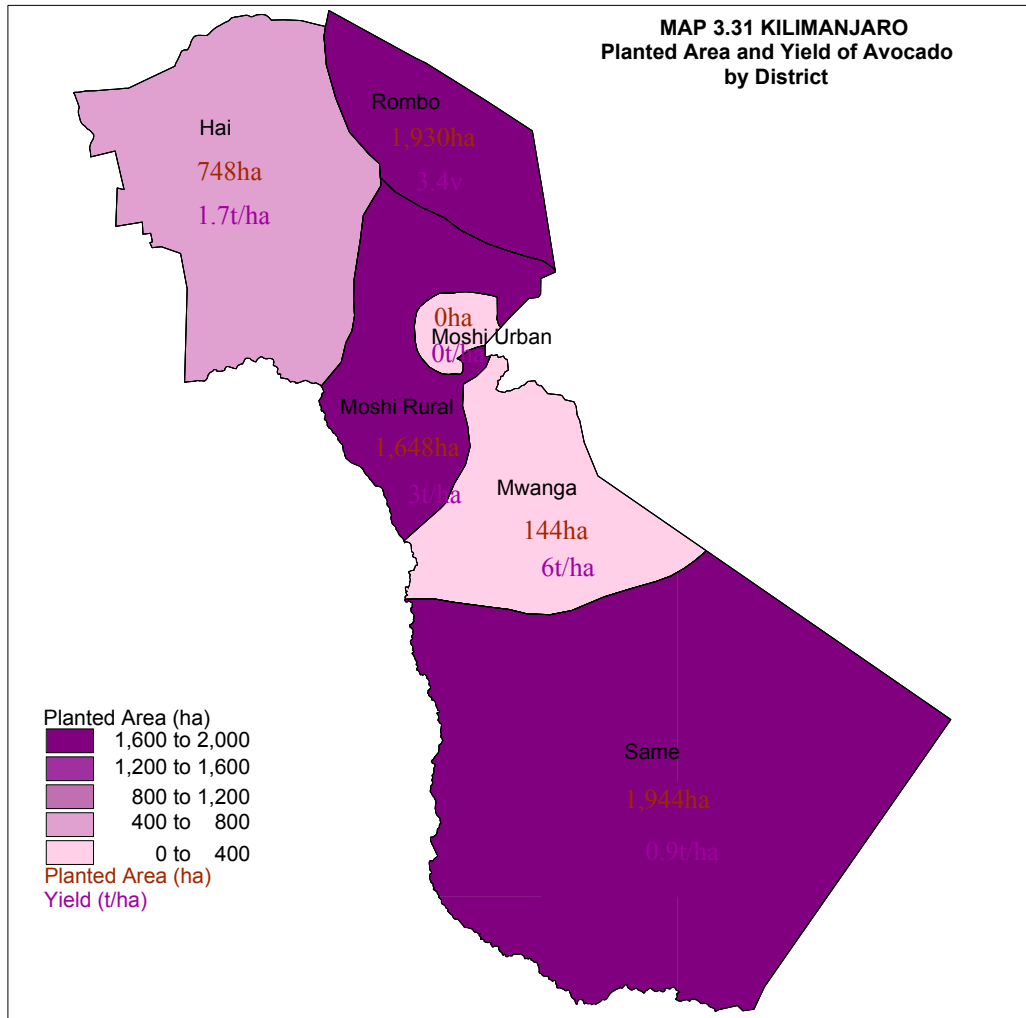
3.5.2 Methods of Soil Preparation

Hand cultivation is the most used method for soil preparation and was used on an area of 115,798 ha which represented 67 percent of the total planted area, followed by tractor ploughing (38,937 ha, 23%) and oxen ploughing (16,565 ha, 10%). More hand cultivation was used during short rainy season at 90.02% against 32.7% for the long rainy season; oxen ploughing were more common in the long rainy season with 7.8% against 5.4%









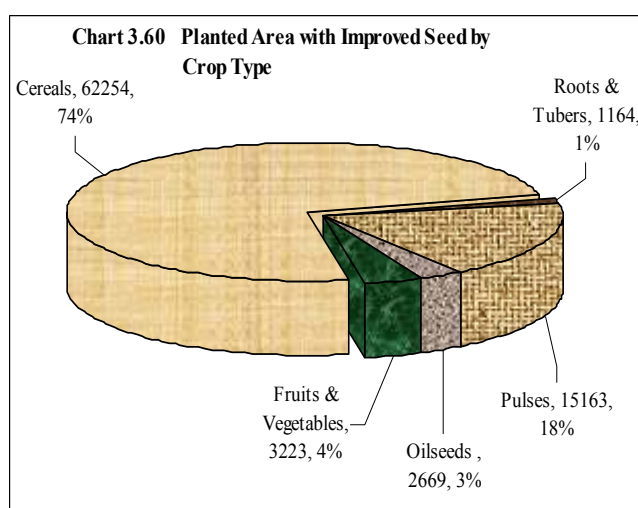
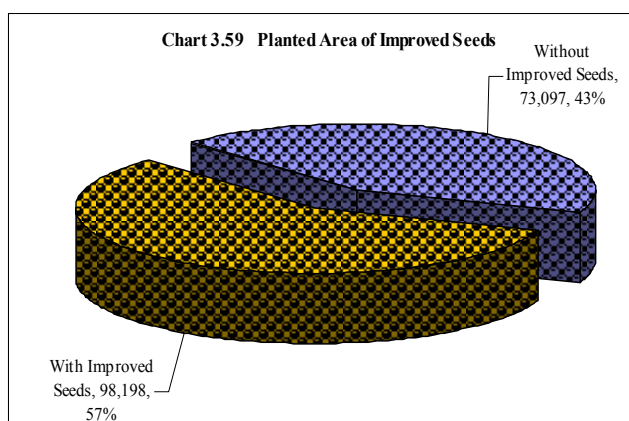
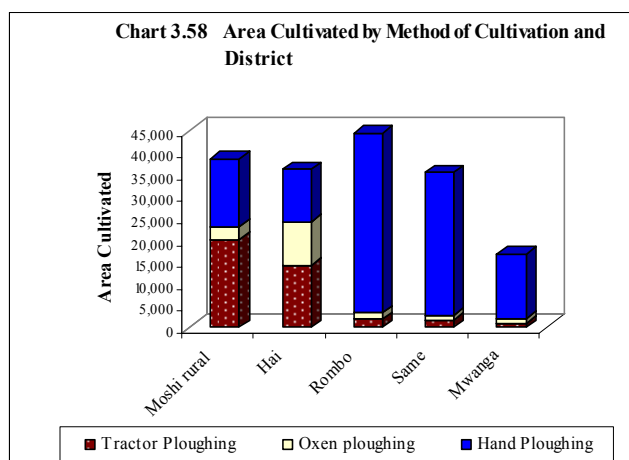
in the long rainy season. Similarly tractor ploughing was used more during the long rainy season of 21.9% against 4.5% during the short rainy season.

In Kilimanjaro region, Rombo district had the largest planted area cultivated by hand hoe ploughing (41,050 ha, 35.5%) followed by Same (32,618 ha, 28.2%), Moshi rural (15,608, 13.5%), Mwanaga (11,872 ha, 10.3%) and Hai (11,872 ha, 10.3%), (Chart 3.58)

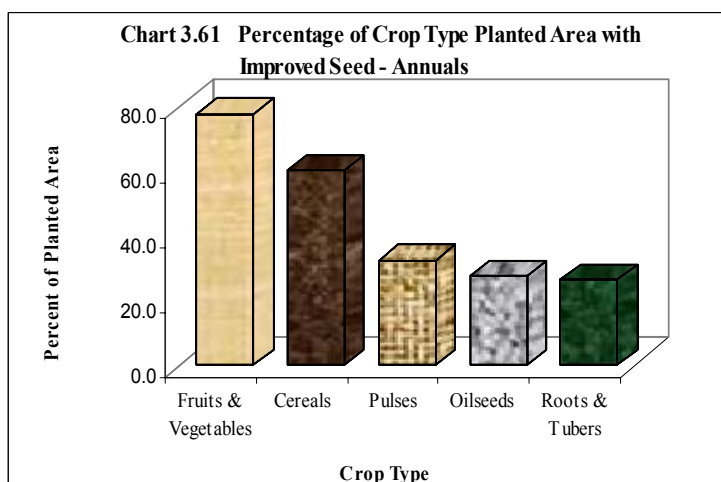
3.3.3 Improved Seeds Use

The planted area using improved seeds was estimated at 73,097 ha which represented 43 percent of the total planted with the annual crops and vegetables area. The percentage use of improved seed in the long rainy season was 59.3 percent, and higher than the corresponding percentage uses for the short rainy season at 54.4 percent

Cereals had the largest area planted with improved seeds (62254 ha, 74% of the area planted with improved seeds) followed by pulses (15163 ha, 18%), fruits and vegetables (3223 ha, 4%), oil seeds & nuts (2,669 ha, 3%), roots & tubers (1164 ha, 1%) (Chart 3.60).

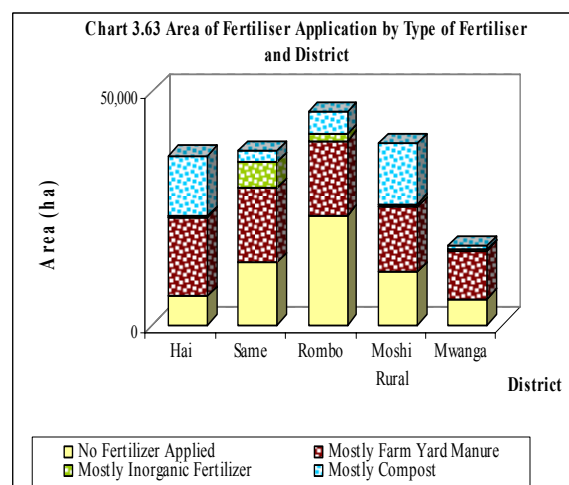
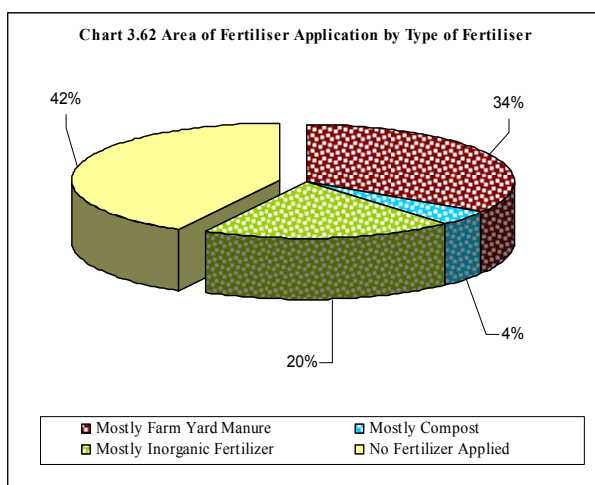


However, the use of improved seed in fruits and vegetables is much greater than in other crop types (77.5%), followed by cereals (60.1%), pulses (32.3%), oil seeds & nuts (27.4%) and root & tubers (26.4%). (Chart 3.61).



3.5.4 Fertilizer Use

The use of fertilisers on annual crops is moderate with a planted area of 114,912 ha (65.9 of the total planted area in the region). The planted area without fertilisers for annual crops was 59,341 hectares representing 34.1 percent of the total planted area with annual



crops. Of the area planted with fertilizer application, farm yard manure was applied to 59,341 ha which represents 34 percent of the total planted area (65.9% of the area planted with fertilizer application in the region). This was followed by mostly Inorganic fertilizer (34,082 ha, 20%) and mostly compost 7,579 ha representing only 4 percent of the total planted area

The highest percentage of the area planted with fertilizer (all types) was in Hai district (83.3%) followed by Moshi Rural (70.9%), Mwanza (67.3%), Same (64.7%) and Rombo (48.5%) (Table 3.9)

Table 3.9 Number of Crop Growing Households and Planted Area by Fertilizer use and District during Long and Short Rainy Season

District	Fertilizer Use									
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		Total	
	No.of Households	Planted Area	No.of Households	Planted Area	No.of Households	Planted Area	No.of Households	Planted Area	No.of Households	Planted Area
Rombo	28,672	15,865	545	4,891	4,317	1,294	9,732	23,394	43,266	45,444
Mwanga	5,743	10,297	283	895	399	226	7,068	5,542	13,492	16,960
Same	10,459	16,057	2,195	2,621	2,180	5,378	10,943	13,136	25,777	37,192
Moshi R	10,099	14,073	477	12,812	5,795	453	4,173	11,226	20,544	38,564
Hai	4,614	16,960	73	12,864	3,840	227	4,399	6,043	12,926	36,093
Total	59,587	73,251	3,573	34,082	16,530	7,579	36,315	59,341	116,006	174,253

Most annual crop growing households do not use any fertiliser (approximately 199,425 households, 71.4%). The percentage of the planted area with applied fertiliser was highest for cereals (64% of the area planted with no application of fertilizers during short rainy season). This was followed by pulses (24%), Roots & Tubers (5%), fruits and vegetables (4%), oil seeds (3%) and cash crops (0%). (Table 3.10).

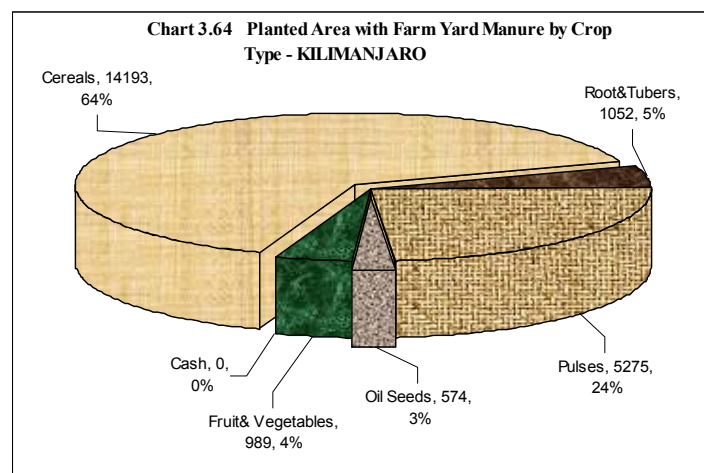
Table 3.10 Number of Crop Growing Households and Planted Area by Fertilizer use and District- LONG RAINY SEASON

District	Fertilizer Use									
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		Total	
	No.of Households	Planted Area	No.of Households	Planted Area	No.of Households	Planted Area	No.of Households	Planted Area	No.of Households	Planted Area
Rombo	11,961	6,679	1,096	593	1,514	1,150	19,584	10,218	34,155	18,640
Mwanga	4,599	2,439	163	89	685	550	8,358	5,744	13,806	8,822
Same	3,901	3,194	4,199	3,565	1,404	802	12,265	7,849	21,769	15,410
Moshi R	12,666	8,163	855	288	20,485	10568	19,756	12,883	53,763	31,902
Hai	6,004	4,152	364	168	16,275	10,951	18,582	14,949	41,225	30,220
Total	39,131	24,626	6,679	4,703	40,363	24,021	78,545	51,644	164,718	104,994

Farm Yard Manure Use

The total planted area applied with farm yard manure in Kilimanjaro region was 22,083 ha. The number of households that applied farm yard manure in their annual crops during the long rainy season was 39,131 and it was applied to 22,083 ha representing 21.03 percent of the total area planted during that season (Table 3.10).

Cereals had the highest percent of the total area planted with applied farm yard manure (64%), followed by Pulses (24%), Roots & Tubers

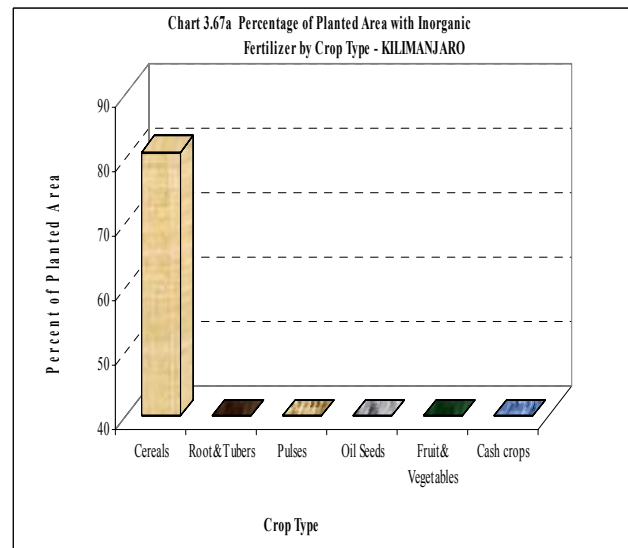
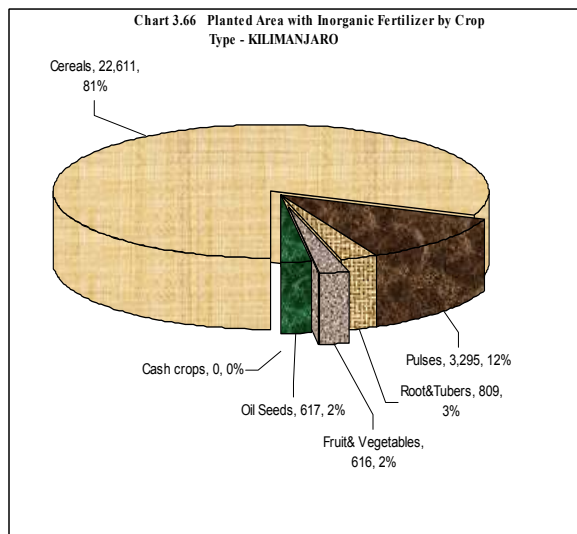
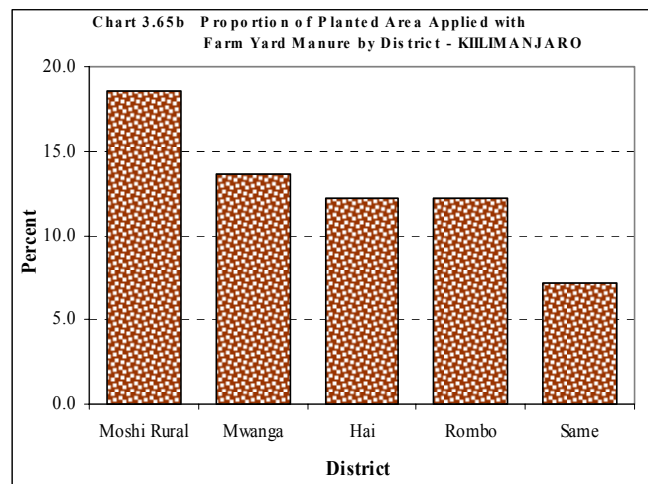
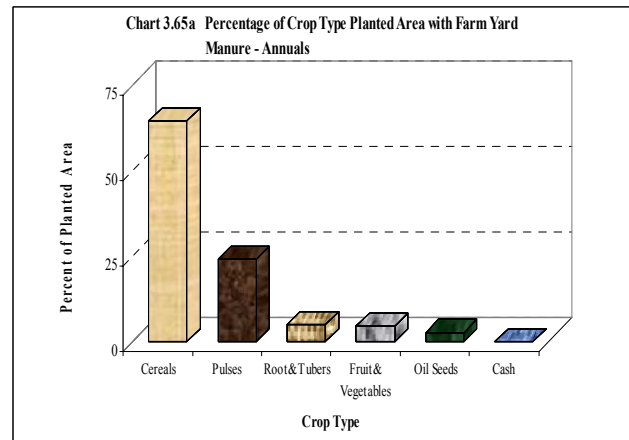


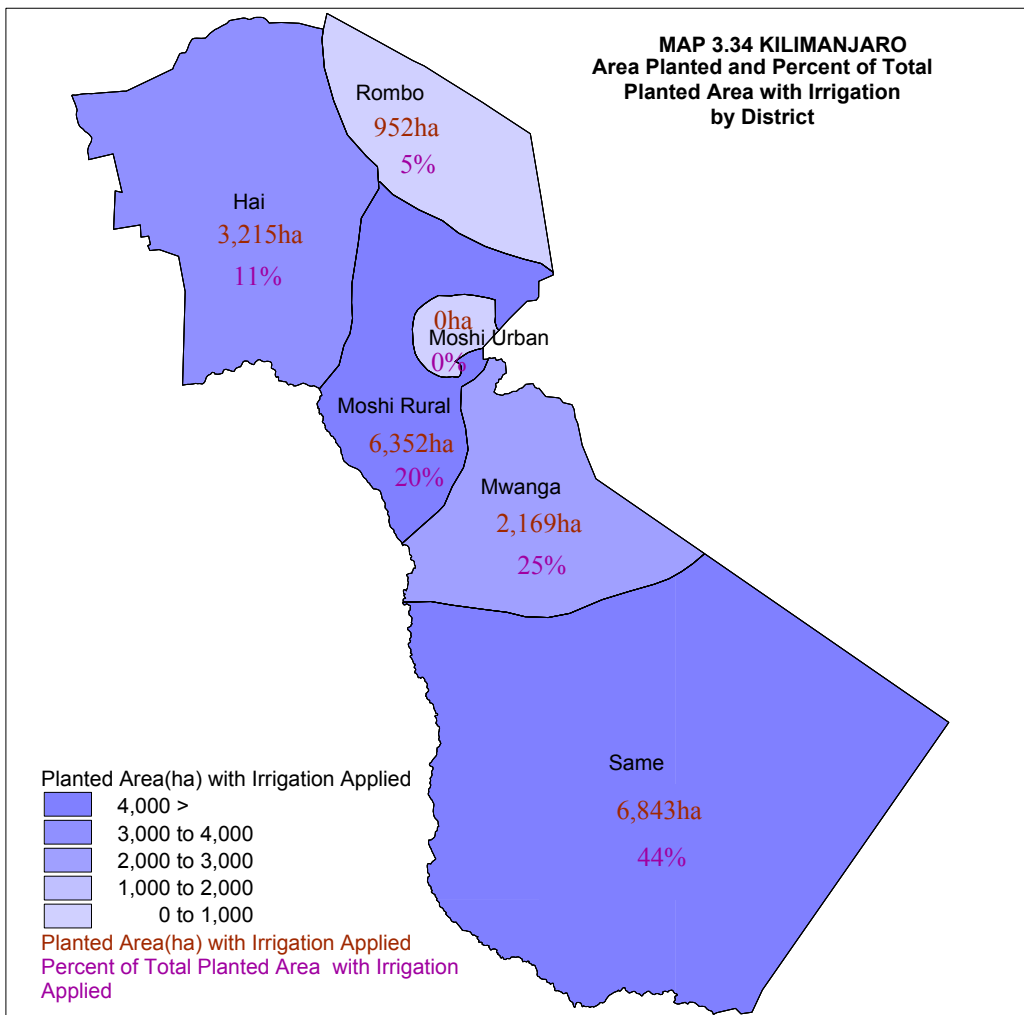
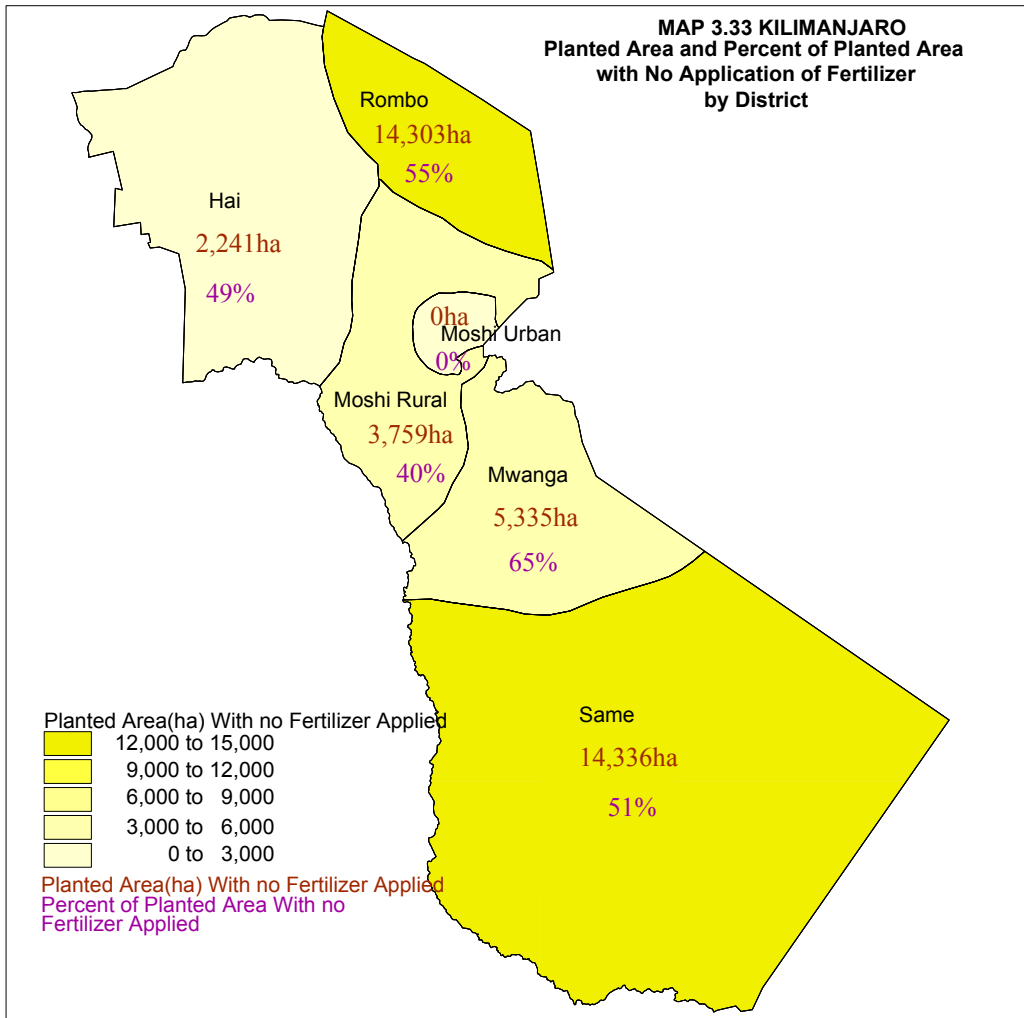
(5%), Fruits & Vegetables (4%), Oil seeds (3%), No Farm Yard Manure which was applied on Cash crops. (Chart 3.65a).

Farm yard manure is mostly used in Moshi rural (19% of the total planted area in the district), followed by Mwangi (14%), Hai and Rombo had (12%) each and Same had (7%) (Chart 3.65b).

Inorganic Fertiliser Use

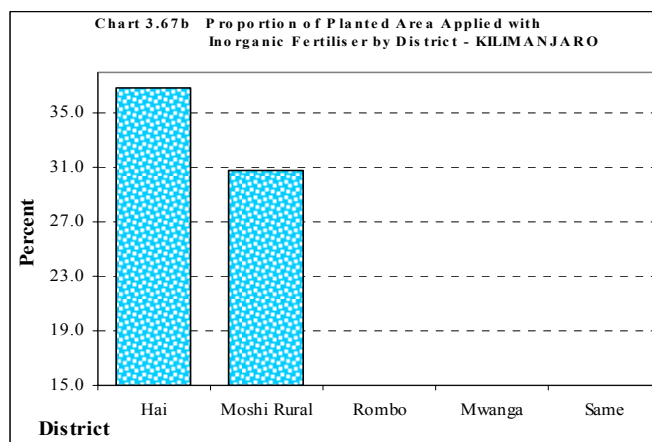
The total planted area applied with inorganic fertilisers in Kilimanjaro region was 27,948 ha which represents 16.03 percent of the total planted area with annuals in the region and 50.5 percent of the total planted area with fertiliser.





The number of households that applied inorganic fertilizer on their annual crops during the long rainy season was 77,437 and it was applied to 27,948 ha representing 26.6 percent of the total area planted during that season (Table 3.10). The largest area applied with inorganic fertilizers was on cereals (81% of the total area applied with inorganic fertilizers), followed by pulses (12%), roots and tubers (3%), oil seeds and fruits & vegetables had (2%) each. No Inorganic fertilizers which was applied to Cash crops. (Chart 3.66) and (Chart 3.67a).

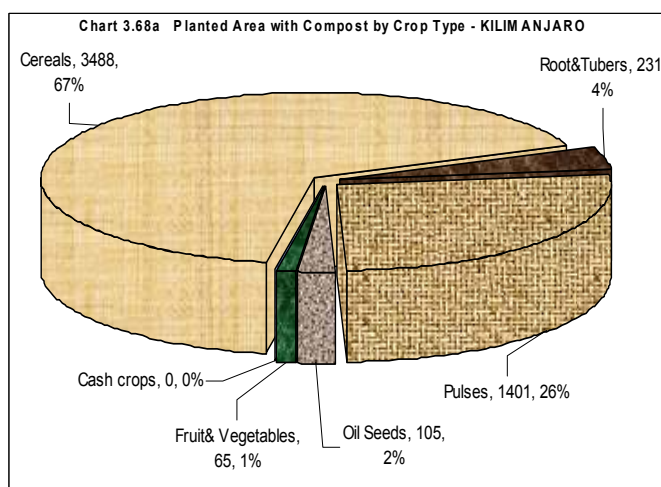
Inorganic fertiliser is mostly used in Hai district (36.9% of the total planted area in the district), followed by Moshi rural (30.7%), Rombo (3%), Same (2.8%) and Mwanga (2.8%) (Chart 3.67b).

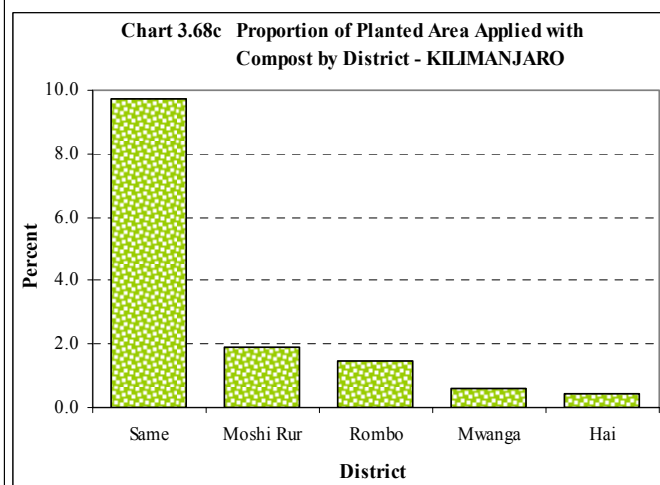
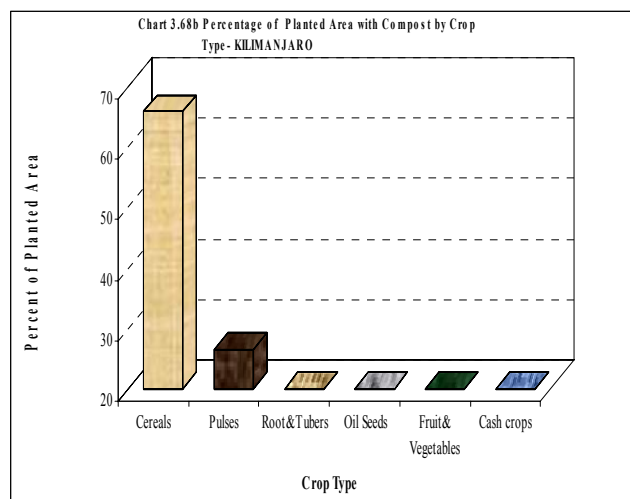


Compost Use

The total planted area applied with compost was 5,290 ha which represents only 3 percent of the total planted area with annual crops in the region and 9.6 percent of the total planted area with

fertiliser in the region. The number of households that applied compost manure on their annual crops during the long rainy season were 11,181 (Table 3.10 and Chart 3.68a). The proportion of area applied with compost was low for each type of crop; however the distribution of the total area using compost manure shows that 20 percent of this area was cultivated with cereals followed by pulses (26%), roots & tubers (4%), oil seeds (2%), and fruits & vegetables (1%). No compost manure which were applied to cash crops, (Chart 3.68b).





Compost is mostly used in Same district (9.7% of the total planted area in the district), followed by Moshi rural (1.9%), Rombo (1.5%), Mwanga (0.6%) and Hai (0.4%) (Chart 3.68c).

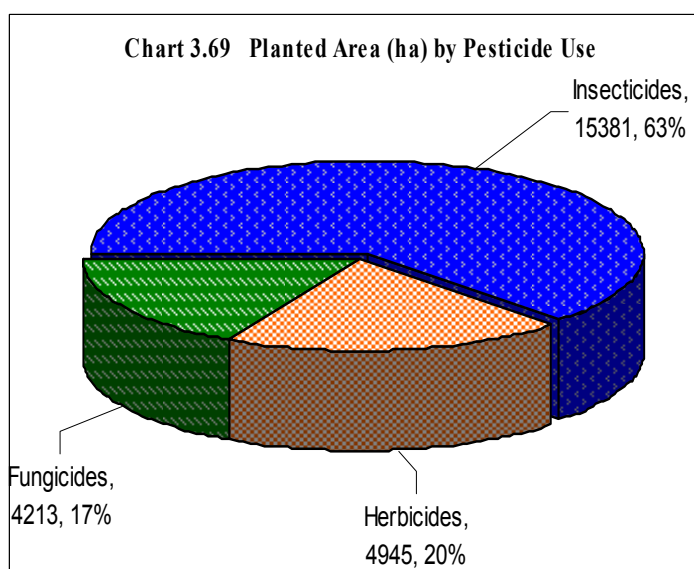
3.5.5 Pesticide Use

Pesticides are chemicals used for controlling insects, diseases and weeds. This section analyses the use of these chemicals by smallholders on both annual and permanent crops in the region.

Pesticides were applied to a planted area of 24,539 ha of annual crops and vegetables.

Insecticides are the most common pesticide used in the region (63% of the total area applied with pesticides).

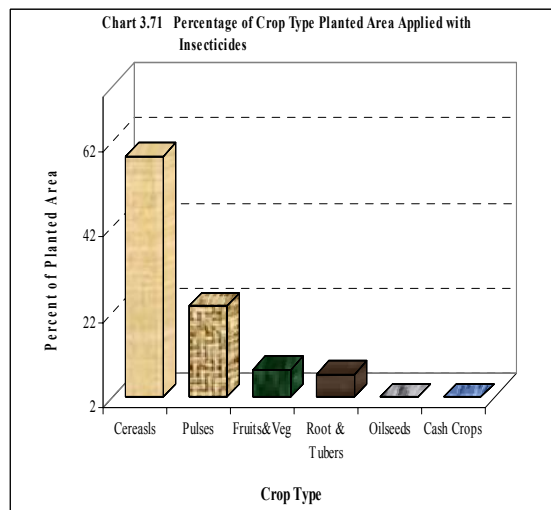
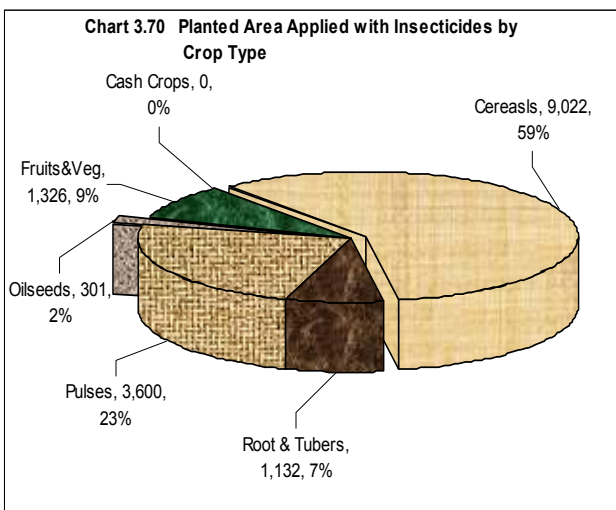
This was followed by herbicides (20%) and fungicides (17%) and (Chart 3.69).



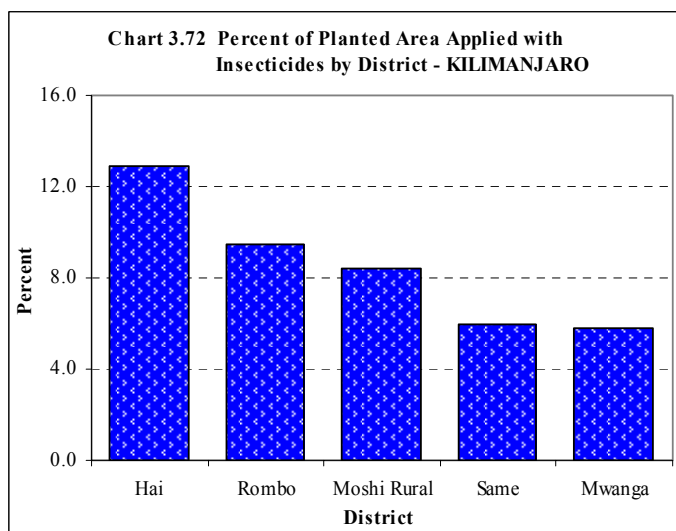
Insecticide Use

The planted area applied with insecticides was estimated at 15,381 ha which represented 8.8 percent of the total planted area for annual crops and vegetables.

Cereal crops had the largest planted area applied with insecticides (9,022 ha, 59%) of the total planted area with insecticides) followed by pulses (3,600 ha, 23%), fruits & vegetables (1,326 ha, 9%), roots & tubers (1,132 ha, 7%) and oil seeds & oil (301 ha, 2%). No insecticides which were applied to cash crops. (Chart 3.70). However, the proportion of planted area applied with insecticides was largest for cereals(59%), pulses (23%), fruits/vegetables (9%), roots & tubers (7%), Only 2 percent the area planted with oil seeds & tubers was applied with insecticides (Chart 3.71).



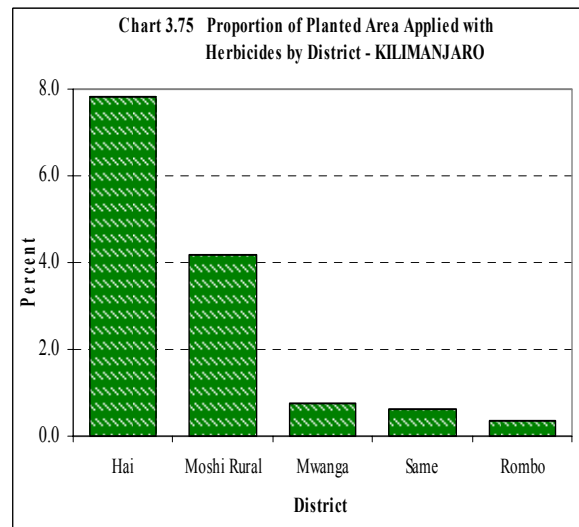
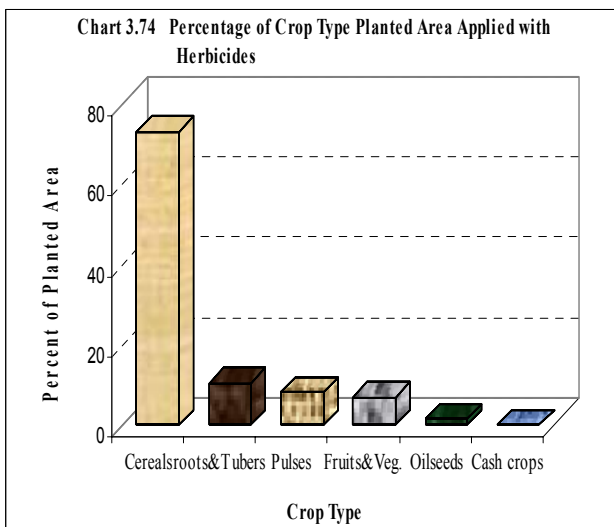
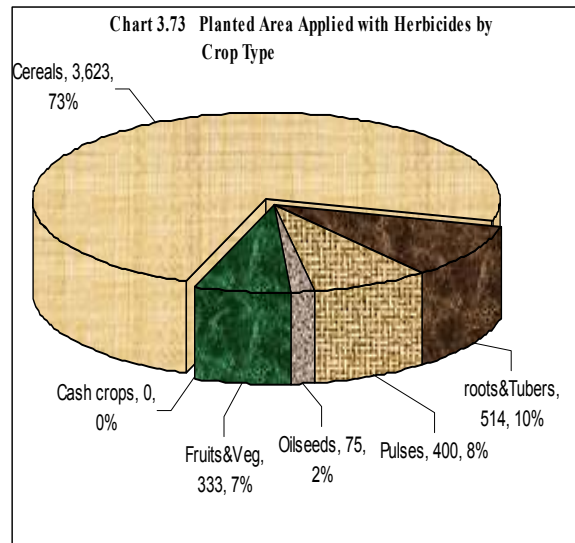
Hai district had the highest percent of planted area with insecticides (12.9% of the total planted area with annual crops in the district). This was followed by Rombo (9.5%), Moshi rural (8.4%) and Same (6.0%). The smallest percentage use was recorded in Mwanga district (5.8%) (Chart 3.72)



Herbicide Use

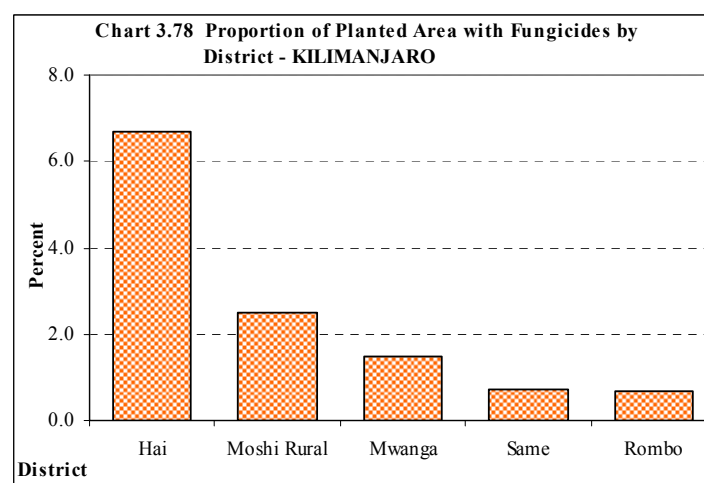
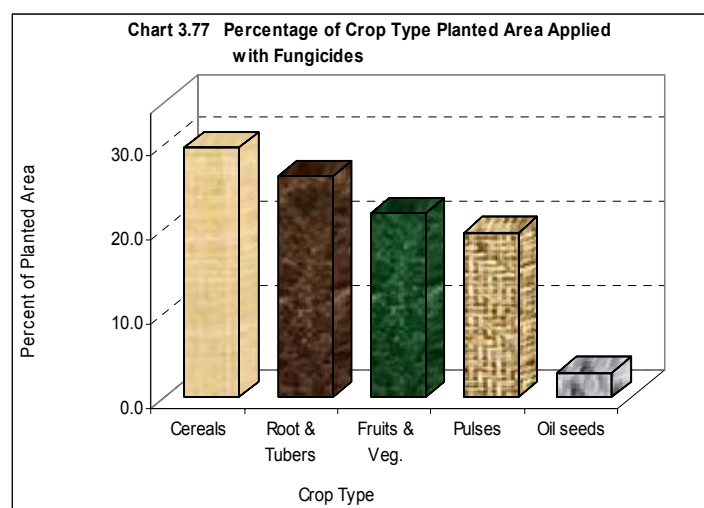
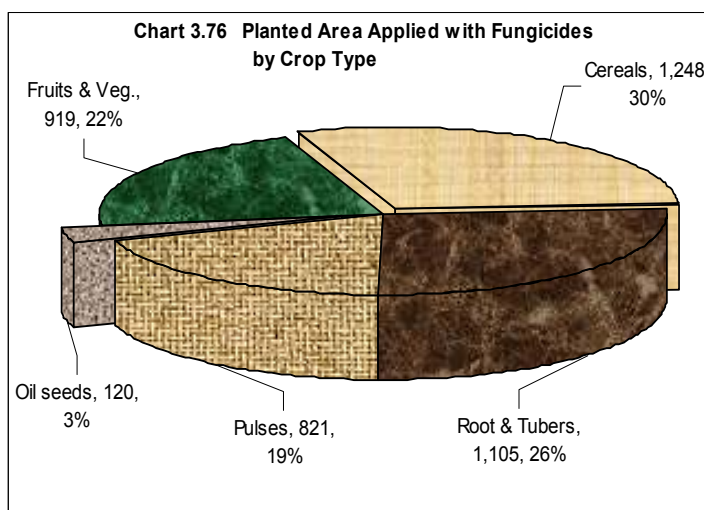
The planted area applied with herbicides was 3,623 ha which represented 2.8 percent of the total planted area annual crops and vegetables. Cereals had the largest planted area applied with herbicides (3,623 ha, 73%) followed by roots & tubers (514 ha, 10%), pulses (400 ha, (8%), fruits & vegetables (333 ha, 7%) oil seeds (75 ha, 2%). No herbicides applied on cash crops (Chart 3.73).

Hai district had the highest percent of planted area with herbicides (7.8% of the total planted area with annual crops in the dis0.31%). (Chart 3.75).



Fungicides Use

The planted area applied with fungicides was 4,213 ha which represented 2.4 percent of the total planted area for annual crops and vegetables. Cereals had the largest planted area applied with fungicides (1,248 ha, 30%) followed by roots & tubers (1,105 ha, 26%), fruits & vegetables (919 ha, 22%), pulses (821 ha, 19%), and oil seeds (120 ha, 3%), (Chart 3.76). However, the proportion of planted area applied with fungicides was greater in cereals, roots and tubers and fruits & vegetables than in other crop types being (78%) for pulses (19%) and oilseeds (3%) chart 3.77). Hai district had the highest percent of planted area with fungicides (6.7% of the total planted area with annual crops in the district). This was followed by Moshi rural (2.5%), Mwanga (1.5%). The smallest percentages use were recorded in Same and Rombo districts with (0.7%) each (Chart 3.78).



3.5.6 Harvesting Methods

The main harvesting method for cereals and other crops was reported to be by hand. Very small amounts of crops were harvested by machine.

3.5.7 Threshing Methods

Hand threshing was the most common method used, with 53 percent of the total area planted with cereals during the long rainy season being threshed by hand. Bush clearing had (5%), tractor slashing (3%) and burning (1%).

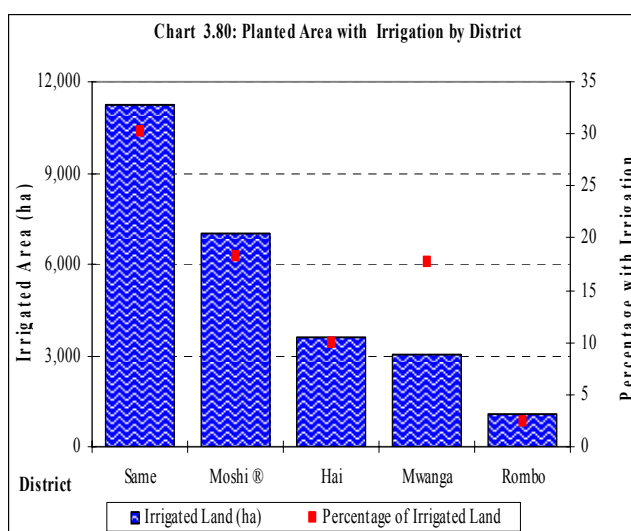
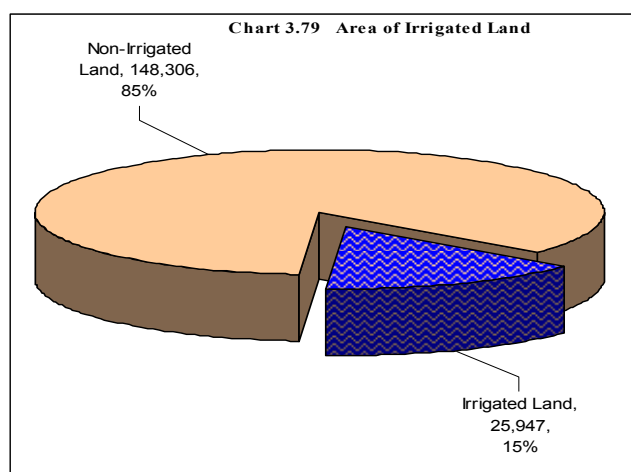
3.6 Irrigation

Water is the limiting factor to crop production in the majority of areas in Tanzania and without water most other agricultural practices applied to crops do not result in significant increases in yield. This section deals with the area under irrigation for different crops and the means by which water was extracted from the source and applied to the field.

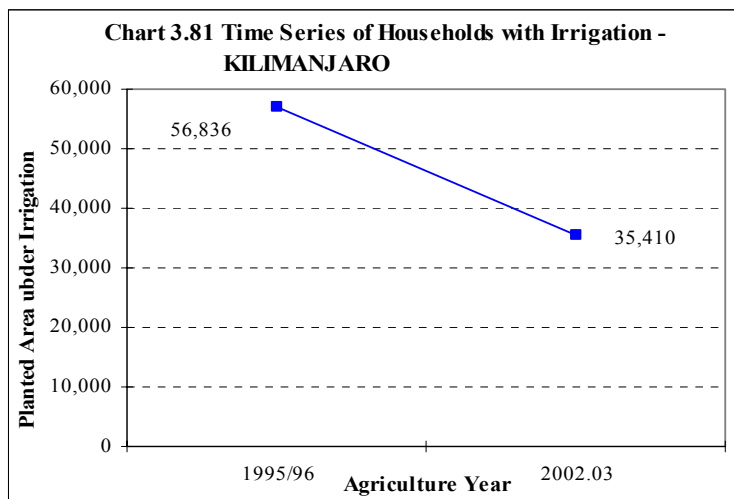
3.6.1 Area Planted with Annual Crops and Under Irrigation

In Kilimanjaro region, the area of annual crops under irrigation was 25,947 ha representing 15 percent of the total area planted (Chart 3.79). The area under irrigation during the long rainy season was 15,190 ha accounting for 59 percent of the total area under irrigation. In the short rainy season, 10,758 ha or 3.6 percent of the total area planted with crops was irrigated.

The district with the largest planted area under irrigation for annual crops was Same (11,255 ha, 43% of the total irrigated planted area with annual crops in the region). This was followed by Moshi rural with (7,029 ha, 27%), Hai (3,570 ha, 14%), Mwanga (3,014 ha, 12%) and Rombo (1,079 ha, 4%), When expressed as a percentage of the total area planted in each district, Same had the highest with 30% of the planted area in the district under irrigation. This was followed by Moshi rural and Mwanga districts with (18%) each and Rombo (2%) (Chart 3.80).

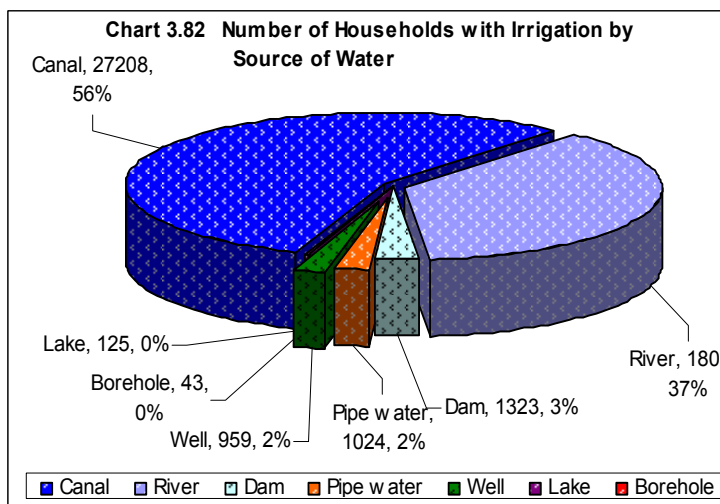


The agricultural households practicing irrigation in Kilimanjaro region appears to have decreased by 38 percent over the 7 year period from 56,836 households in 1995/96 to to 35,410 households in 2002/03. (Chart 3.81)



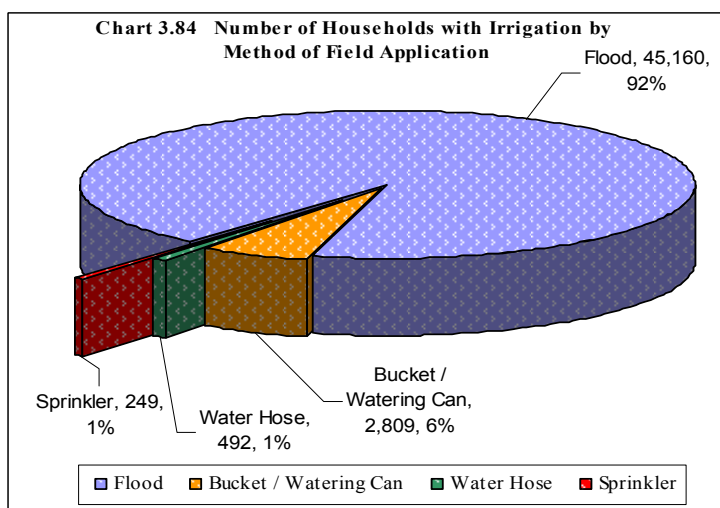
3.6.2 Sources of Water Used for Irrigation

The main source of water used for irrigation was from canals (27,208 households, 56% of households with irrigation). This was followed by rivers (18,029 households, 37%), dams (1,323 households, 3%), pipe water (1,024 households, 2%), well (959 households 2%), lake (125 households, 0.3%) and borehole (43 households, 0.1%). (Chart 3.82)



3.6.3 Methods of Obtaining Water for Irrigation

The hand gravity was the most common method of getting water for irrigation with 93.5 percent of households using this method. This was followed by hand bucket with 6.1 percent of households. The remaining methods (hand pump, motor pump and others) had 0.1% each (Chart 3.83).

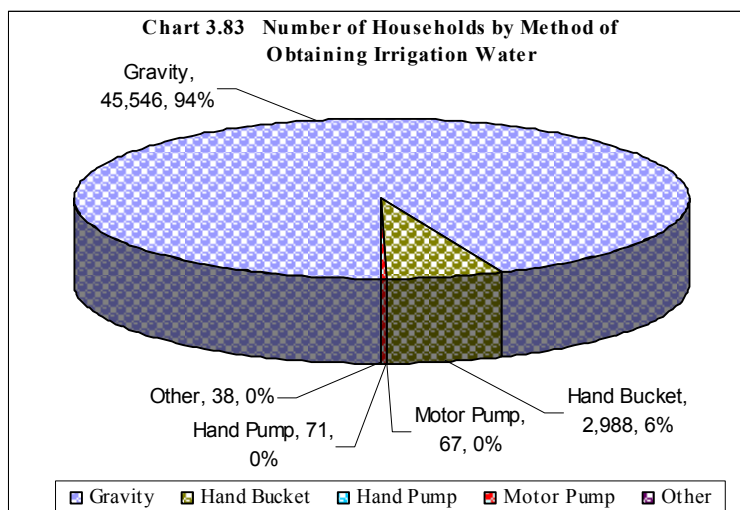


Hand bucket was used most in Moshi rural district by (96.8% of the households practicing irrigation) followed by Mwanza (96.5%), Moshi rural (93.6%) and Hai (88.6%). Hand bucket was more common in Moshi rural district with 11 percent of households using the method to get water for irrigation, followed by Mwanza (5%), Hai and Same districts both had (3%) each.

3.6.4 Methods of Water

Application

Most of agricultural households (55.2% of households using irrigation) used flood as a method of field application. This was far followed by watering cans (6%), both water horse and sprinklers had (1%) each. Chart 3.84

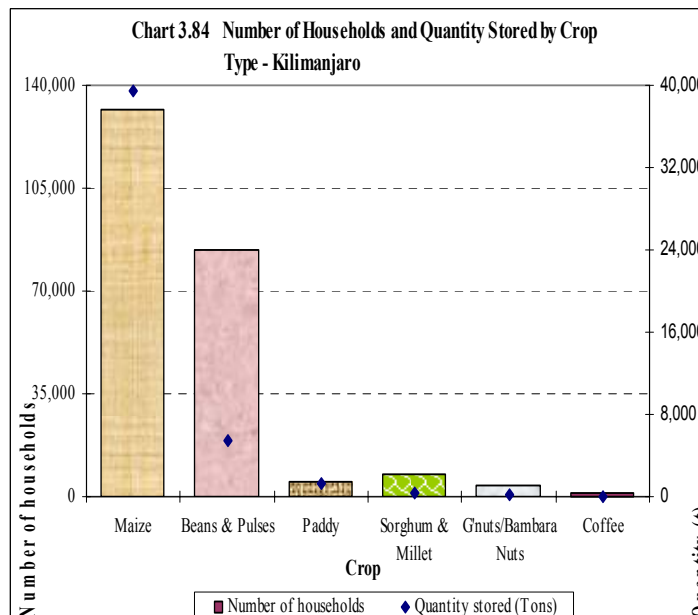


3.7 Crop Storage, Processing and Marketing

3.7.1 Crop Storage

Crop storage means keeping a crop for a certain period of time as food for the household, in order to sell at higher prices or as seeds for planting in the following season.

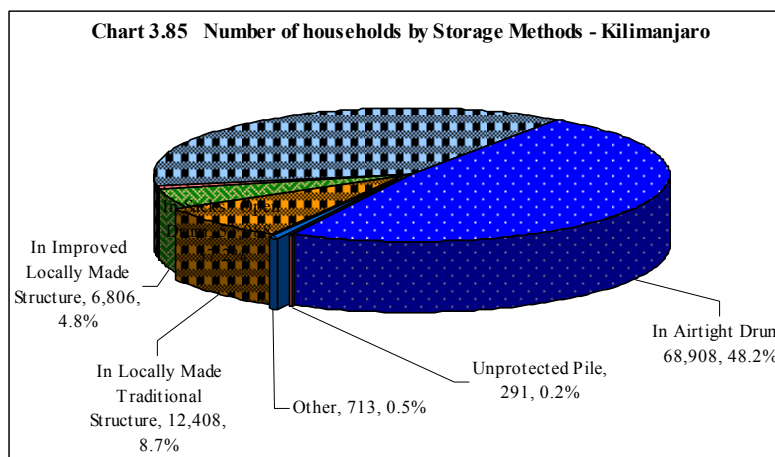
The results for Kilimanjaro region show that there were 142,851 crop growing households (90% of the total crop growing households) that stored various agricultural products in the region.



The most important stored crop was maize with 131,869 households storing 39,418 tonnes as of 1st January 2004. This was followed by beans and pulses (84,190 households, 5,366t), paddy (15,765 households, 1,222t), sorghum and millets (7,920 households, 403t), groundnuts and bambaranuts (3,981 household, 123t) and coffee (1,487 household, 63t). Other crops were stored in very small amounts.

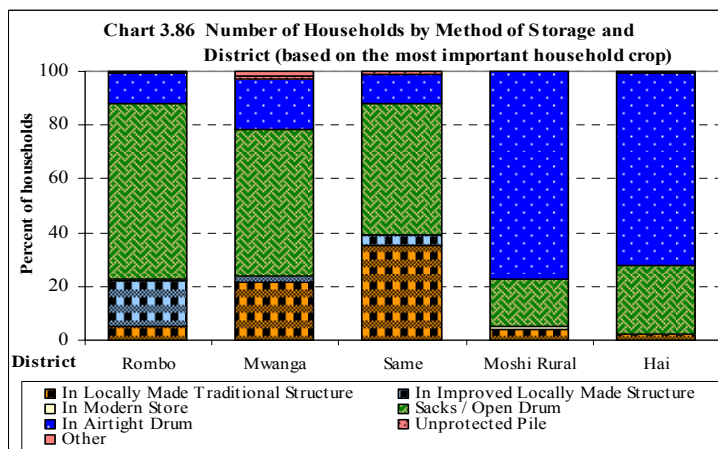
3.7.1.1 Methods of Storage

The region had 68,908 crop growing households storing their produce in airtight drum (48.2% of households that stored crops in the region). The number of households that stored their produce in locally made traditional crib was 12,408 (8.7%). This was followed by improved locally made structures (6,806 households, 4.8%), other types of storage (713 households, 0.5%) and unprotected pile 291 households, 0.2%.



Airtight drums were the dominant storage methods in the region, with the highest percent of households in Moshi Rural using this method (54% of the total number of households storing crop products). This is followed by Hai (35%), Rombo (5%) and Mwanga (3%) and Same (3%) (Chart 3.86)

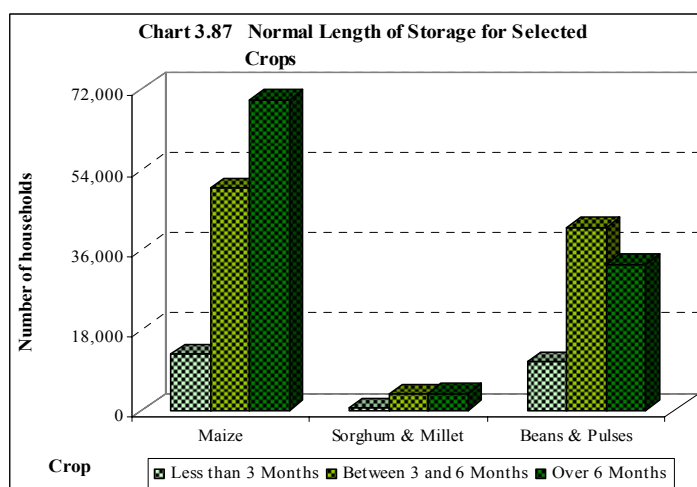
The highest percent of households using sacks and open drum was in Rombo and Hai districts (41.5% and 16.6% of the total number of households storing crops respectively), followed by Moshi Rural (16.2%), Same (15.9%) and Mwanga (9.8%).



3.7.1.2 Duration of Storage

Most households (47% of the households storing crops) stored their produce for a period of over 6 months followed by those that stored for a period of between 3 and 6 months (42%). The minority of households stored their crop for a period of less than 3 months (11%).

Most households that stored pulses stored for a period of between 3 to 6 months followed by over 6 months. A small number of households stored pulses for the period of less than 3 months (Chart 3.87).



The proportion of households that stored their produce for the duration over 6 months was highest in Hai (94.6%) followed by Moshi Rural (75.1%), Same (74.9%), Rombo (56.3%) and Mwanga (22.8%) (Map3.)

District comparison of duration of storage cannot be done for all crops combined. However, the analysis has been done for maize only as it is the most commonly stored crop. In general, quantity stored was related to the quantity produced. Districts with greater production had a higher percent of their crop stored as on 1st October 2003 (Chart 3.88). However, households in Rombo district stored relatively little maize in comparison to the quantity produced indicating that the quantity stored was determined by the food and seed requirement of the household and not to sell during the “off-season” when the farm gate price of maize is higher.

3.7.1.3 Purposes of Storage

Subsistence food crops (maize, beans and pulses, sorghum and millet, paddy and groundnuts and sorghum) are mainly stored for household consumption. The percent of households that stored maize for household consumption as the main purpose of storage was 97.7 percent followed by to sell for higher price (Chart 3.89).

3.7.1.4 The Magnitude of Storage Loss

About 92.2 percent of households that stored crops had little or no loss, followed by household with up to a quarter loss (1.3%), between a quarter and a half (1.3%) and over a half loss (0.2%) (Table 3.11)

The proportion of households that reported a loss of more than a quarter was greatest for maize (2.1% of the total number of households that stored crops) and beans and pulses (0.9%). Most households storing coffee had no storage loss (100%)

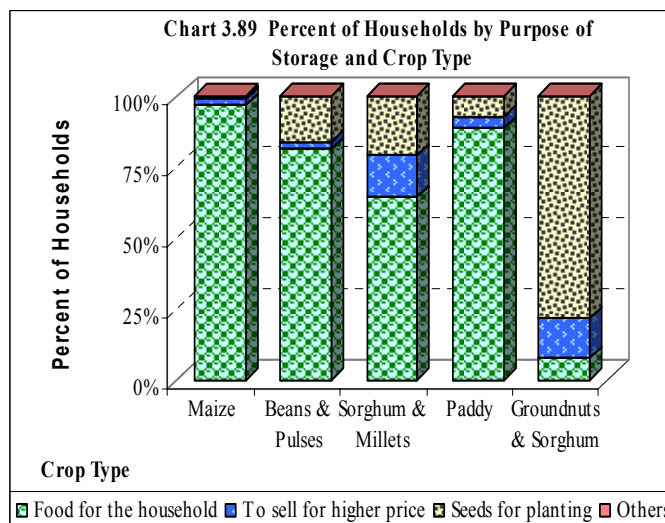
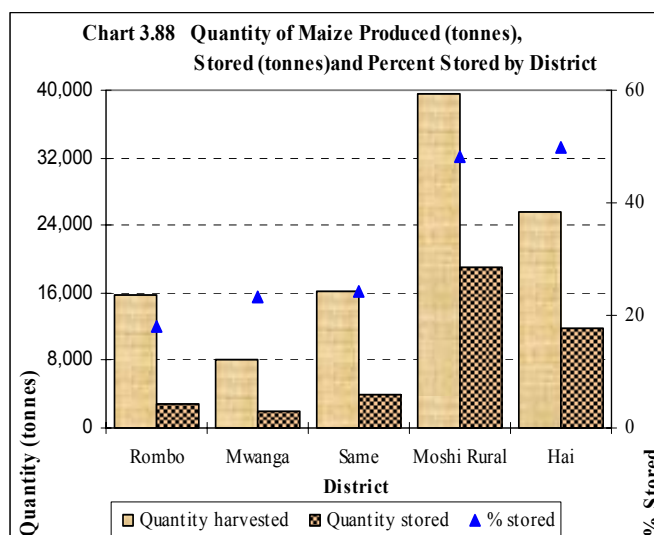


Table 3.11: Number of Households Storing Crops by Estimated Storage Loss and District

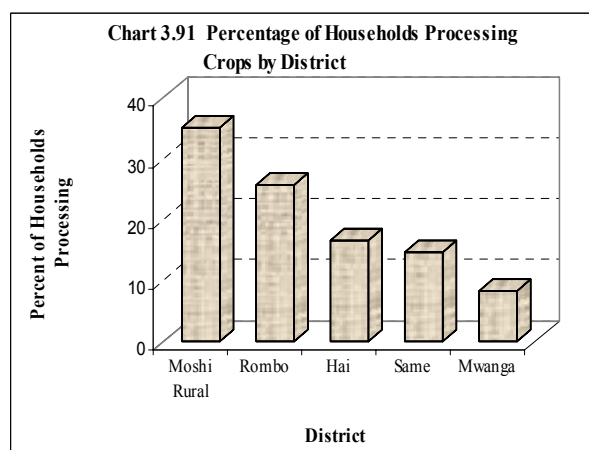
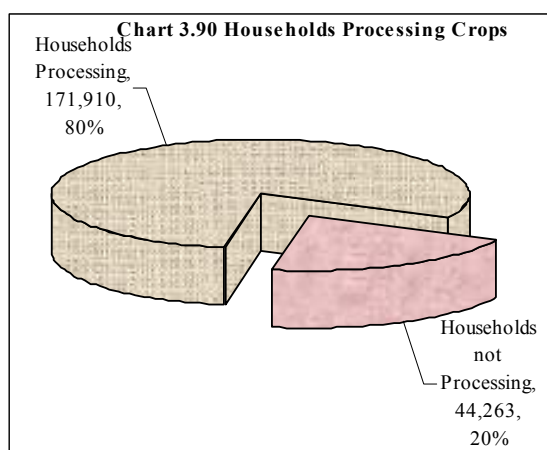
District	Estimate Storage Loss				Total
	Little or no Loss	Up to 1/4 Loss	Between 1/4 and 1/2 Loss	Over 1/2 Loss	
Rombo	64,057	3,237	923	231	68,449
Mwangi	12,711	1,626	130	43	14,510
Same	23,301	4,249	429	73	28,053
Moshi Rural	67,887	2,407	389	0	70,684
Hai	49,028	3,392	1,073	231	53,724
Total	216,985	14,911	2,945	579	235,419

3.7.2 Agro processing and By-products

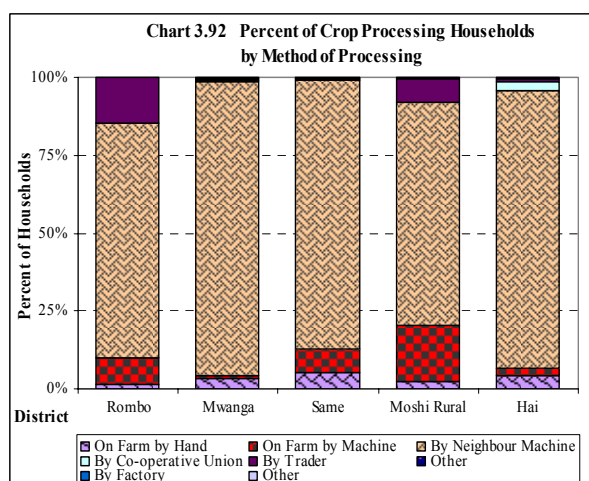
Agro processing refers to a process that converts a crop product from one form to another form in order to add value or increase the palatability of the product. Agro-processing was practiced in most crop growing households in Kilimanjaro region (171,910 households, 80% of the total crop growing households) (Chart 3.90).

The percentage of households processing crops was highest in Moshi Rural district (35%) followed by Rombo (26%), Hai (16%), Same (15%) and Mwanga (8%). (Chart 3.91)

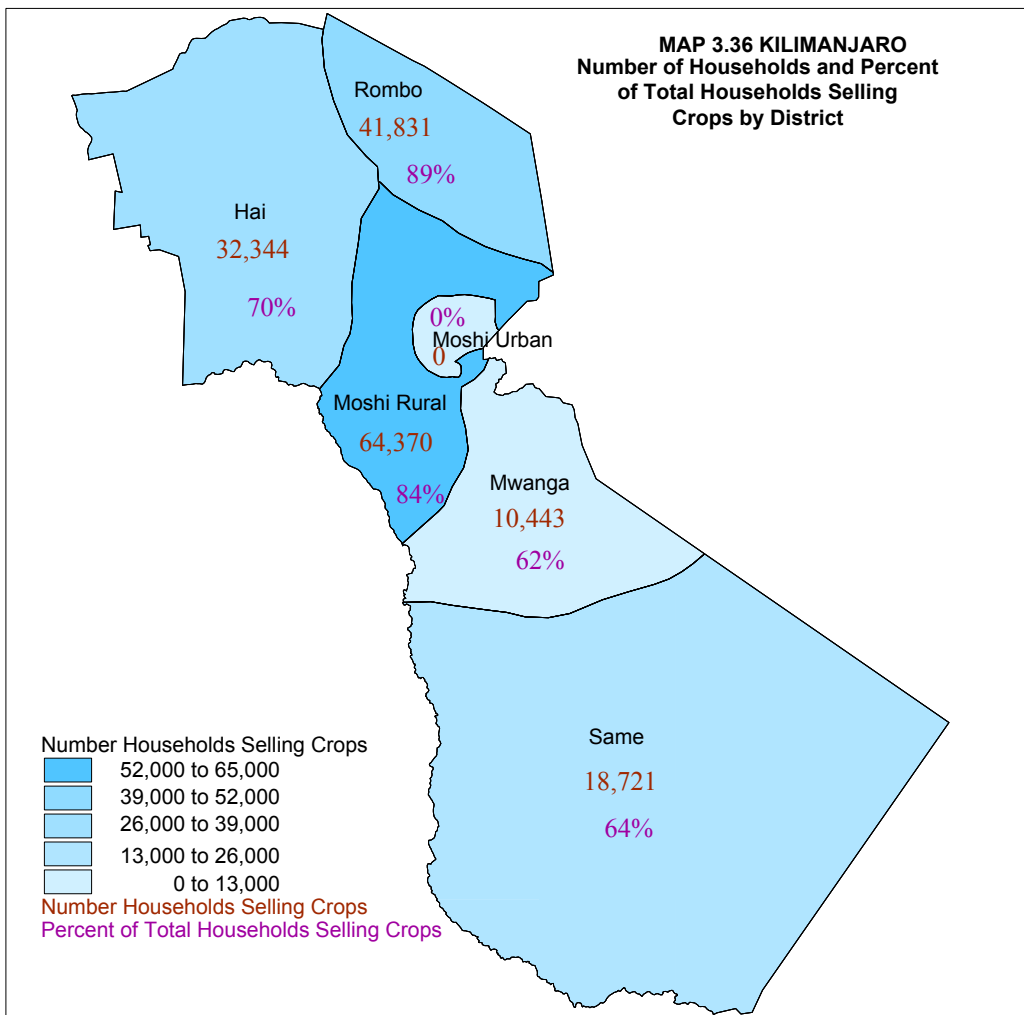
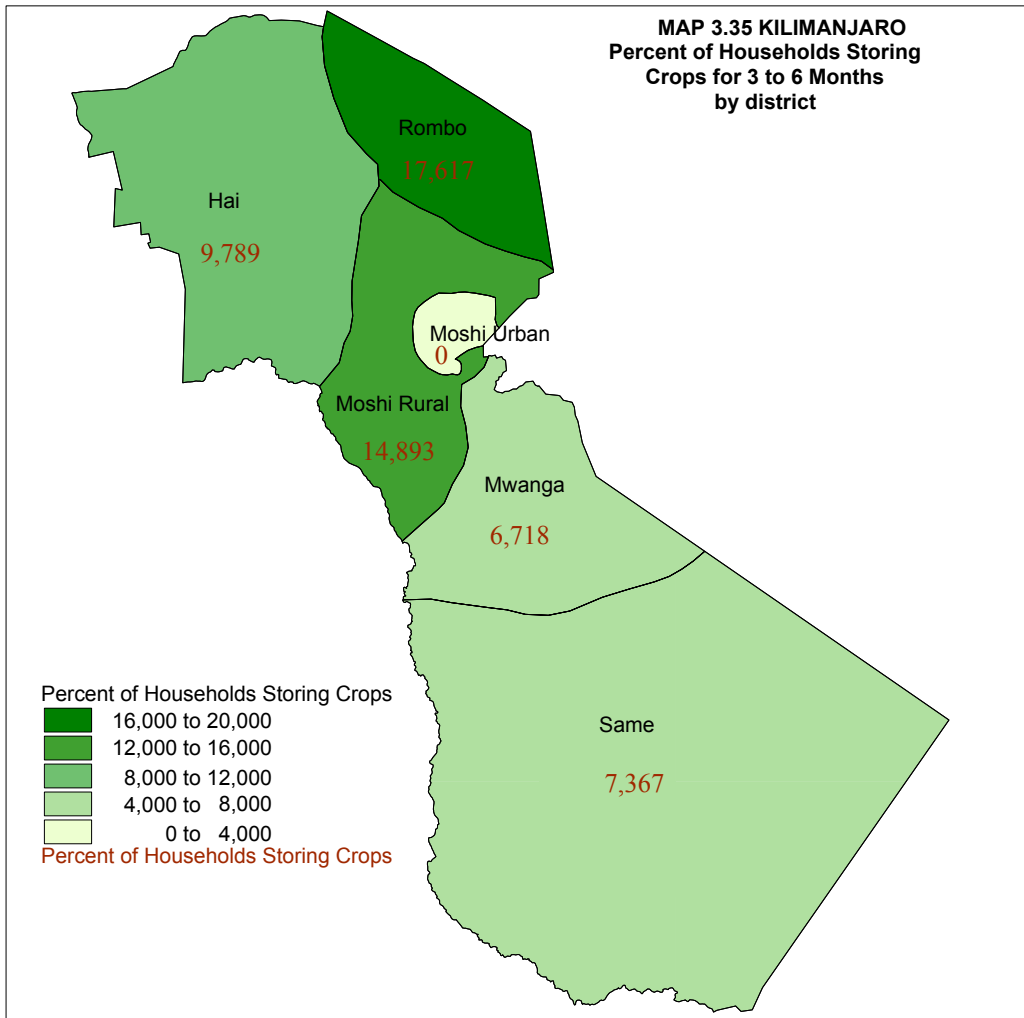
3.7.2.1 Processing Methods



Most crop processing households processed their crops using neighbour's machines representing 79 percent (136,503 households). This was followed by those processing on-farm by hand (17,198 households, 10%), trader (11,307 households, 7%), on-farm by machine (5,236 households, 3%) and by cooperative union (445 households, 1%). The remaining methods of processing were used by very few households.



Although processing by neighbours machine was the most common processing method in all districts in Kilimanjaro region, however district differences existed. Moshi Rural has a higher percent of hand processing than other districts (32%), followed by Rombo (24%), Hai (18%), Same (16%) and Mwanga (10%). Processing by trader was more common in Rombo and Moshi rural (57% and 38% respectively), whilst processing on farm by machine was more prevalent in Moshi Rural, Rombo and Same (Chart 3.92).



3.7.2.2 Main Agro-processing Products

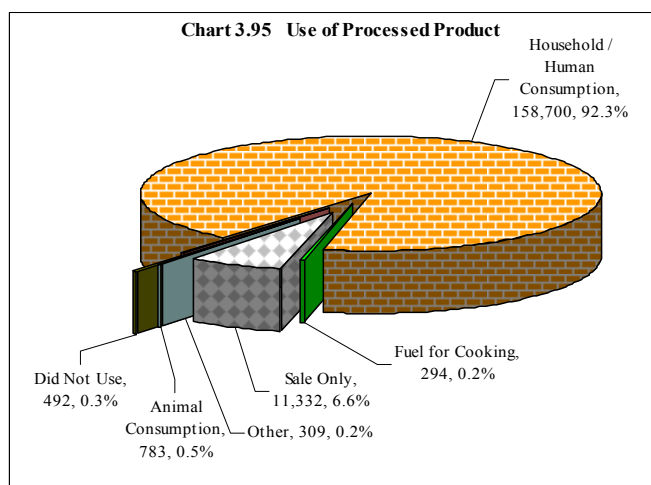
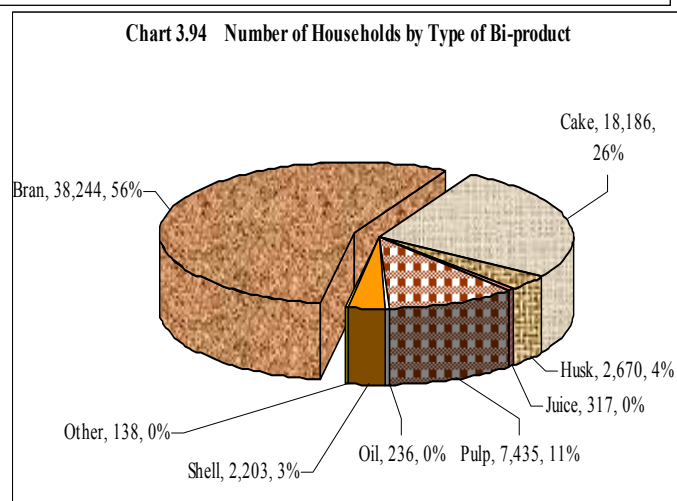
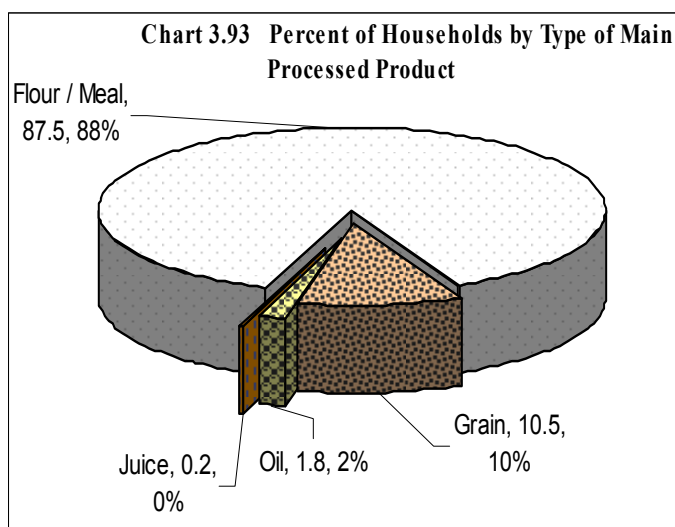
Two types of products can be produced from agro-processing namely, main product and by-product. The main product is the major product after processing and the by-product is secondary after processing. For example the main product after processing maize is normally flour whilst the bi-product is normally the bran.

The main processed product was flour/meal with 150,479 households processing crops into flour (87.5%) followed by grain with 18,016 households (10.5%). The remaining products were produced by a small number of households (Chart 3.93).

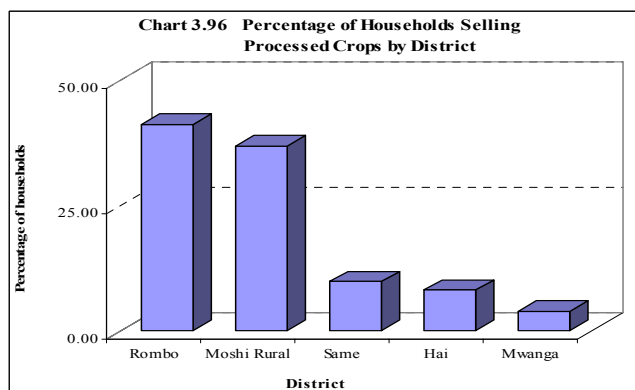
The number of households producing by-products accounted for 40.4 percent of the households processing crops. The most common by-product produced by crop processing households was bran with 38,244 households (56%) followed by cake (18,186 households, 26%), pulp (7,435 households, 11%) and shell (2,203 households, 3%). The remaining by-products were produced by a small number of households (Chart 3.94).

3.7.2.3 Main Use of Primary Processed Products

Primary processed products were used for households or human consumption, fuel for selling, for cooking and for animal consumption. The most important use was for household/human consumption which represented 92.3 percent of the total households that used primary processed product (Chart 3.95). Moshi Rural, Rombo and Mwanga districts were the districts using primary products as fuel for cooking.

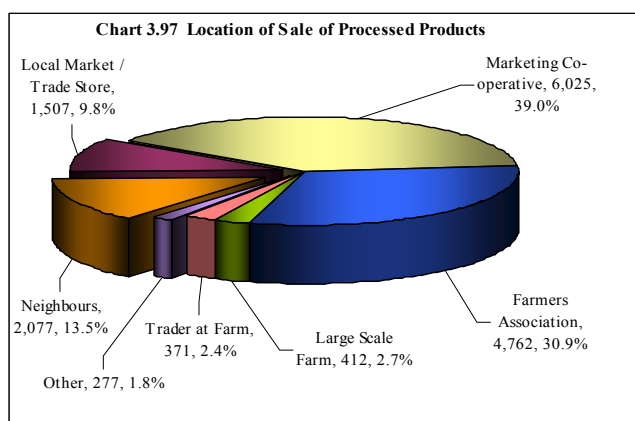


Out of 50,115 households that sold processed products, 20,655 were from Rombo district (41% of the total number of households selling processed products in the region), followed by Moshi Rural district with 18,486 households (37%), Same district with 4,933 households (10%), Hai district with 4,087 households (8%) and Mwanga district with 1,954 households (4%). In Kilimanjaro region, all districts sold processed products (Chart 3.96)



3.7.2.4 Outlets for Sale of Processed Products

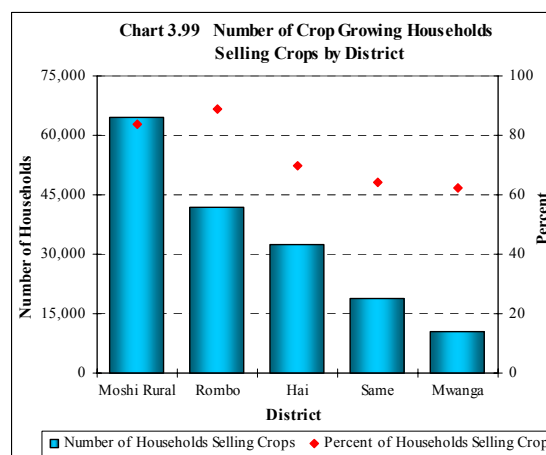
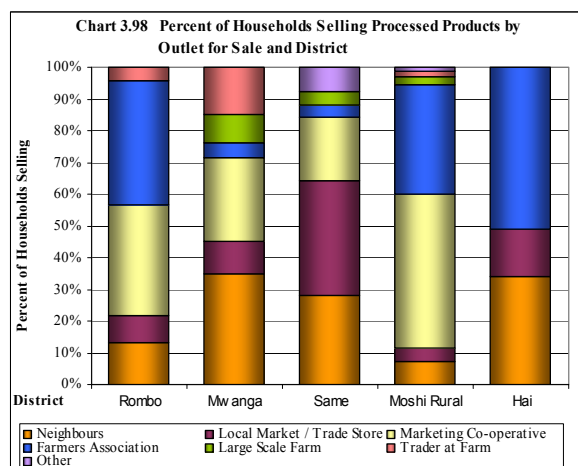
Most households that sold processed products sold to marketing cooperatives (6,025 households, 39% of households that sold crops). This was followed by selling to farmers associations (4,762 households, 30.9%), neighbours (2,077 households, 13.5%), local market (1,507 households, 9.8%), large scale (412 households, 2.7%), trader at farm (317 households, 2.4%) and other unspecified places (277 households, 1.8%) (Chart 3.97).



There are large differences between districts in the proportion of households selling processed products to marketing cooperative with Moshi Rural district having the largest percent of households in the district selling to marketing cooperatives (48%), whereas Rombo had only 35 percent. Hai district had a higher percent of households relying on farmers association than other outlets. Compared to other districts, Same had the highest percent of households selling processed products to local market/trade store.

3.7.3 Crop Marketing

The number of households that reported selling crops was 167,709 which represent 77.6 percent of the



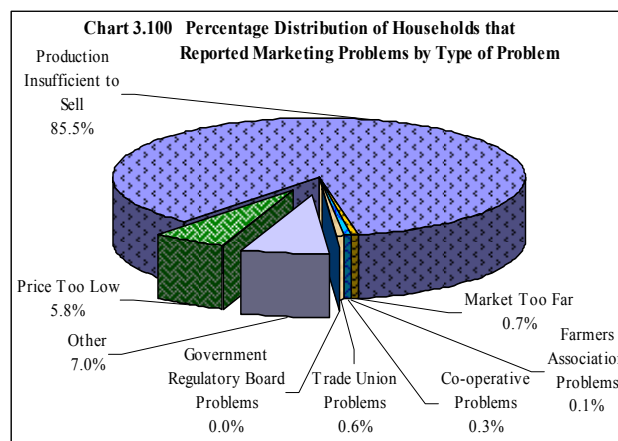
total number of crop growing households. The percent of crop growing households selling crops was highest in Rombo (89%) followed by Moshi Rural (84%), Hai (70%), same (64%) and Mwangi (62%) (Chart 3.99 and Map 3.32).

3.7.3.1 Main Marketing Problems

Low price for agricultural produce was the main marketing problem reported by households (27% of crop growing households). Apart from low market prices, other problems were transport cost too high (6%), longer distances to the markets (3%) and lack of transport (2%). Other marketing problems are minor and represented less than 1 percent of the total reported problems.

3.7.3.2 Reasons for Not Selling Crops

The main reason for not selling crops was reported as “insufficient production to sell”, representing 85.5 percent of the smallholders. The remaining reasons for not selling are in such low numbers that it is not appropriate to rank their importance (Table 3.12).



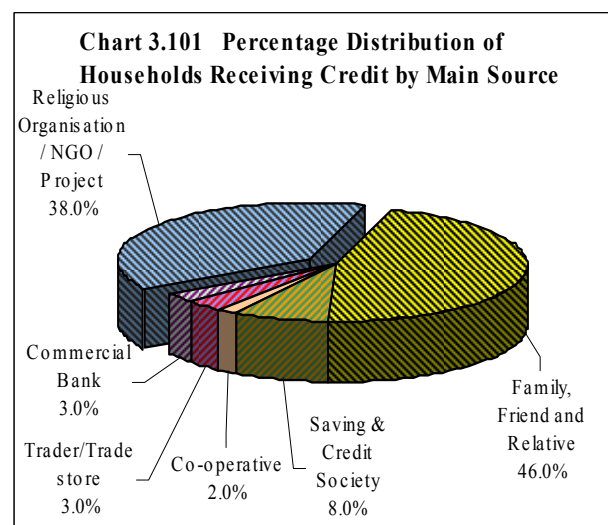
3.8 Access to Crop Production Services

3.8.1 Access to Agricultural Credit

The census result shows that in Kilimanjaro region very few agricultural households (3,643, 2.3%) accessed credit out of the total number of agricultural households, out of those that received credit 2,967 (81%) were male-headed households and 677 (19%) were female headed households. In Mwangi district only female headed households got agricultural credit whereas in Hai district a large number of male households accessed credit. In Rombo districts both male and female headed households had equal access to agricultural credit (Table 3.13).

3.8.1.1 Source of Agricultural Credit

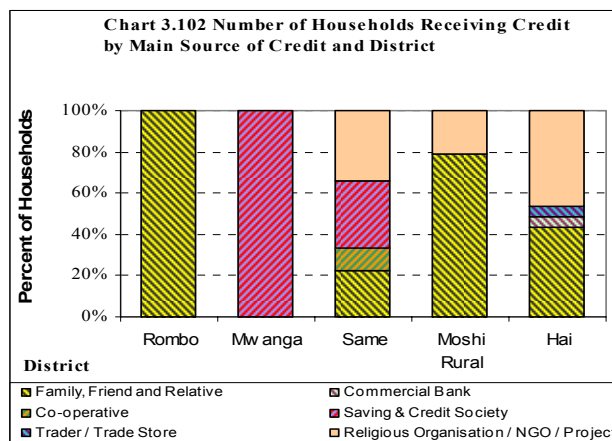
The major agricultural credit providers in Kilimanjaro region were family, friends and relatives (46%), Religious Organizations/Non Governmental Organizations/ projects (38%), saving and credit society (8%), trader/trade store (3%), commercial bank (3%) and cooperatives (2% of the total number of households that accessed credit) (Chart 3.101).



Commercial banks and trader/trade store were the sole source of credit in Hai district and cooperatives were found in Same district only. (Chart 3.102).

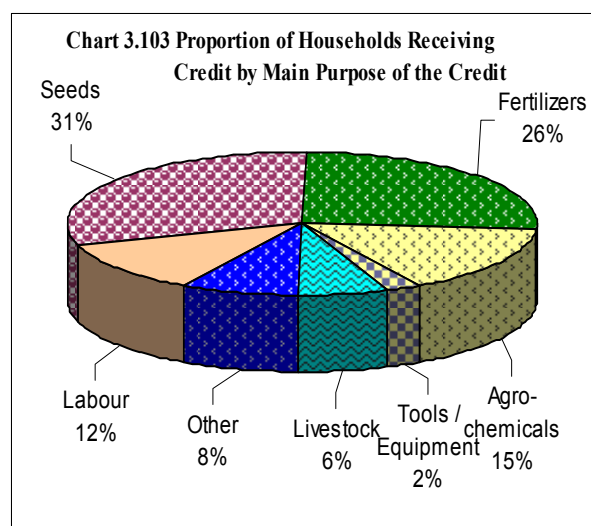
Table 3.13 Number of Agricultural Households that Received Credit by Sex of Household Head and District

District	Male		Female		Total
	Number	%	Number	%	
Rombo	115	50	114	50	228
Mwanga	0	0	76	100	76
Same	572	89	68	11	641
Moshi Rural	135	43	180	57	315
Hai	2,145	90	238	10	2,383
Total	2,967	81	677	19	3,643



3.8.1.2 Use of Agricultural Credit

The agricultural credit provided to agricultural households in the region was used as follows seeds (31%), fertilizers (26%), agrochemicals (15%), labour (12%), other unspecified activities (8%), livestock (6%) and tools and equipment (2%) (Chart 3.103).

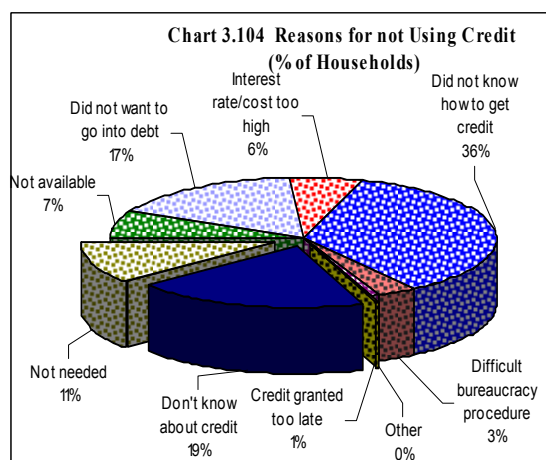


3.8.1.3 Reasons for Not Using Agricultural Credit

The main reason for not using agricultural credit as a source of finance was little credit awareness accounting to 55 percent of the agricultural households (“did not know how to get credit” and “don’t know about credit”). This was followed by “not wanting to go into debt” (17%), households reporting the credit not needed (11%), households reporting un-availability of credit (7%) and households reporting interest rate too high (6%). The rest of the reasons were collectively 4% percent of the households.

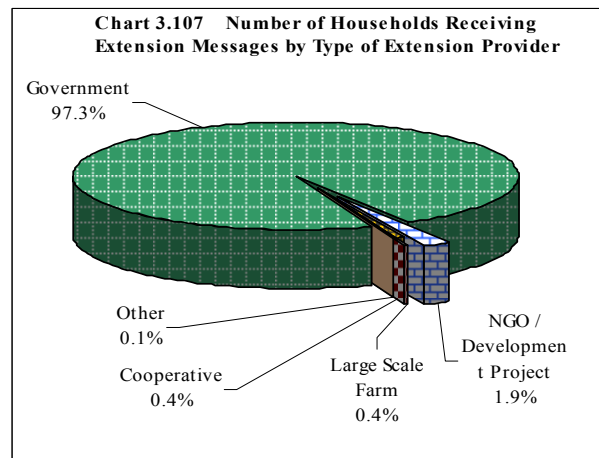
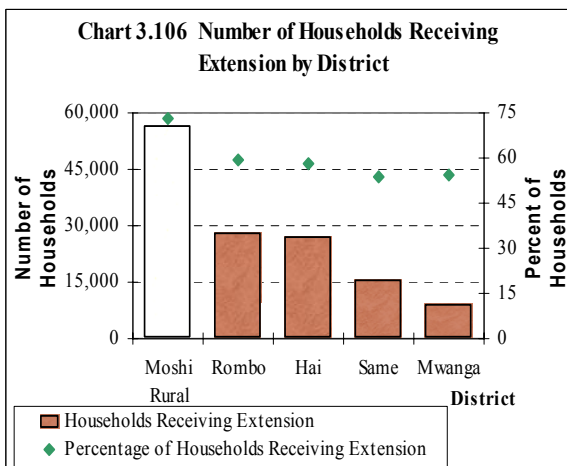
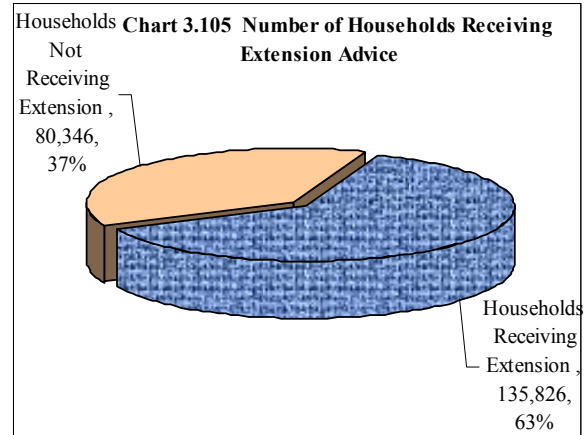
Table 3.12 Reasons for Not Selling Crop Produce

Main Reason	Household Number	%
Production Insufficient to Sell	73,877	85.5
Other	6,025	7.0
Price Too Low	5,028	5.8
Trade Union Problems	484	0.6
Co-operative Problems	293	0.3
Market Too Far	629	0.7
Total	86,336	100.0



3.8.2 Crop Extension

The number of Agricultural households that received crop extension was 135,826 (63% of total crop growing households in the region) (Chart 3.105). Some districts have more access to extension services than others, with Moshi Rural district having a relatively high proportion of households (73%) that received crop extension messages followed by Rombo (59%), Hai (58%), Same (53%) and Mwangwa (54%). (Chart 3.106 and Map 4.33)

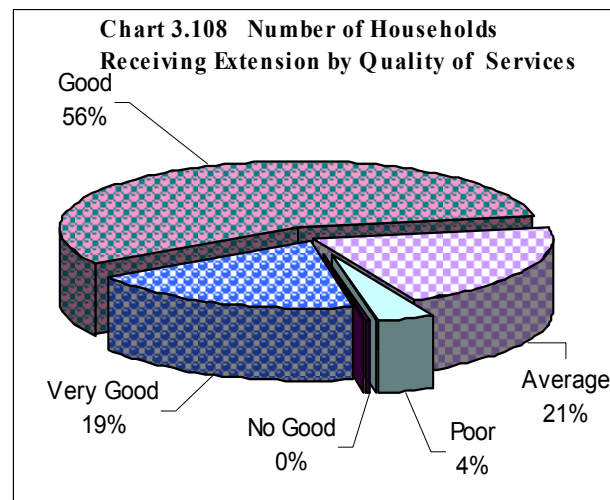


3.8.2.1 Sources of Crop Extension Messages

Of the households receiving extension advice the Government provided the greatest proportion (97.3%). NGO/Development project 1.9 percent, large scale farm provided 0.4 percent, cooperatives 0.4% and other providers 0.1 percent (Chart 3.107).

3.8.2.2 Quality of Extension

An assessment of the quality of extension



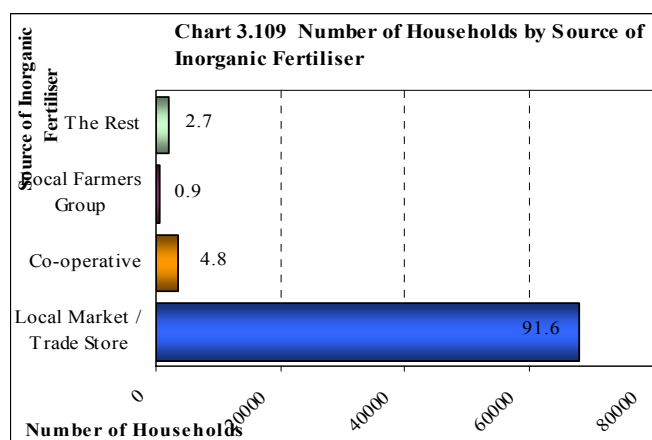
indicates that 56 percent of the households receiving extension ranked the service as being good followed by average (21 %), very good (19%), poor (4%) and none of the households ranked the quality of extension services as no good. (Chart 3.108) However, care should be exercised when making decisions on quality of extension and also other variables in the extension report as all the enumerators were extension agents and some degree of bias is expected.

3.9 Access to Inputs

Access to inputs in this section refers to all crop growing households in Tanzania regardless of whether the household grew annual or permanent crops. In previous sections the reference was to annual crops only. Because of this, some of the figures presented in this section may be slightly different from those in the previous section (Section 3.5). Data on source of inputs is only found in this section and it applies to both annual and permanent crops.

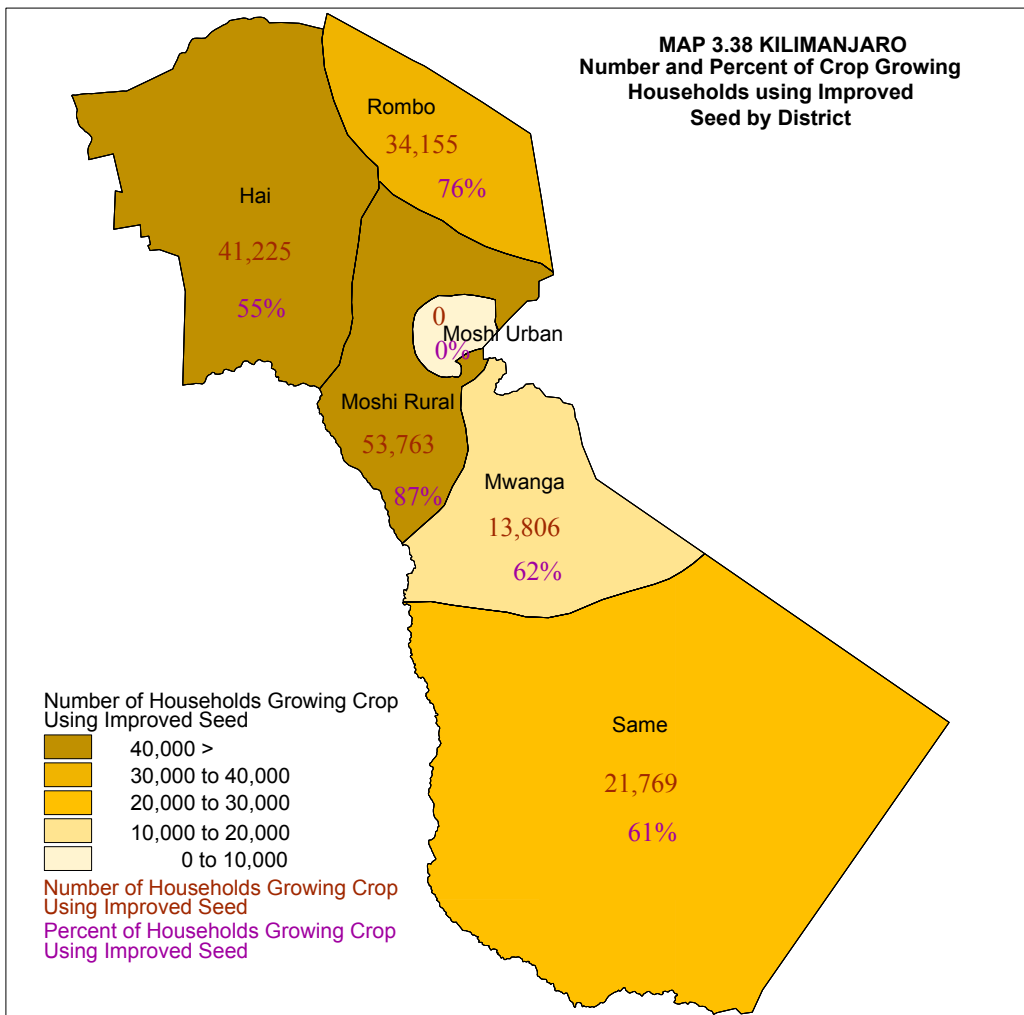
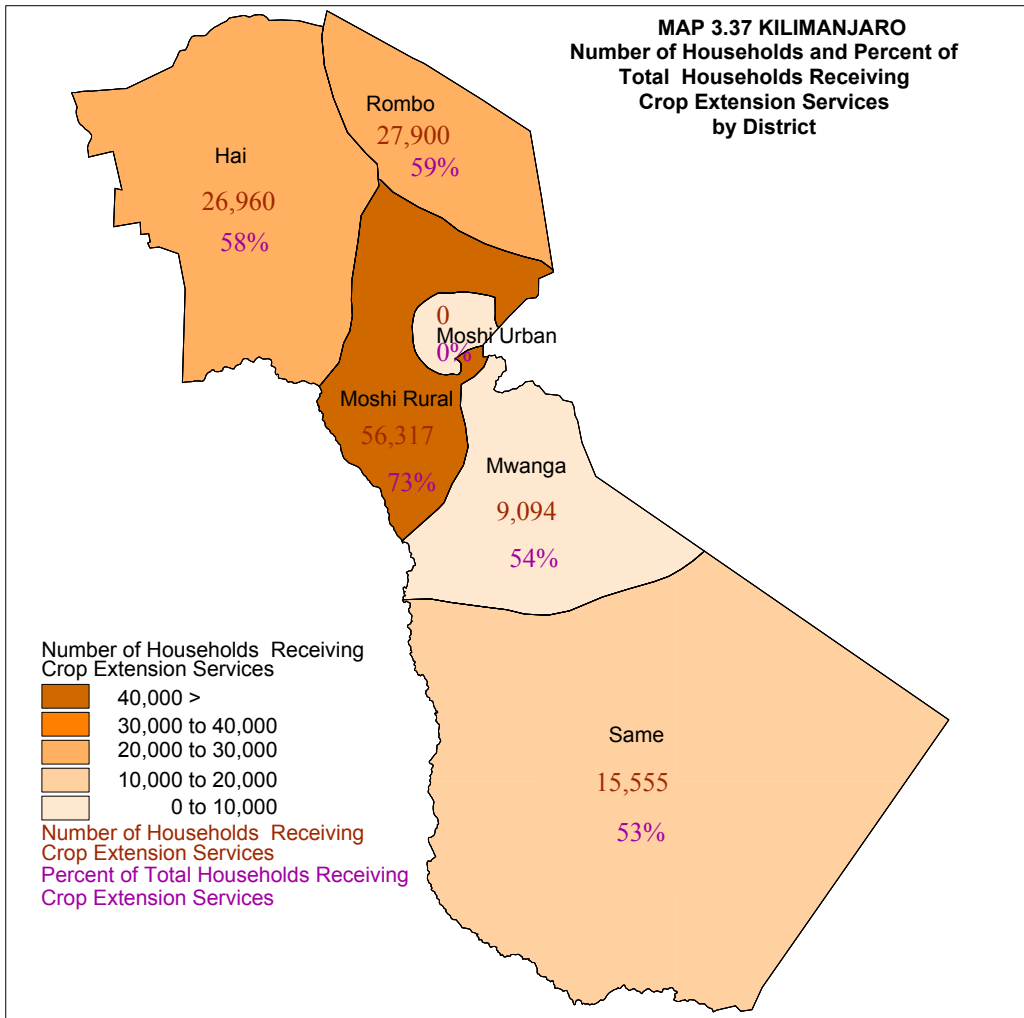
Type of Input	Households With Access to Input		Households Without Access to Inputs	
	Number	%	Number	%
Farm Yard Manure	159,780	74	56,393	26
Improved Seeds	108,843	50	107,456	50
Pesticides/Fungicide	65,983	31	150,189	69
Compost	15,912	7	200,399	93
Inorganic Fertiliser	74,551	34	141,622	66
Herbicide	7,516	3	208,657	97

A small number of households use inputs particularly the inputs that are not produced on the farm such as improved seeds, fungicides, inorganic fertiliser and herbicides. In Kilimanjaro region farm yard manure was used by 159,780 households which represent 74 percent of the total number of crop growing households. This is followed by households using improved seeds (50%), inorganic fertiliser (34%), fungicide (31%), compost (7%) and herbicide (3%) (Table 2.14).

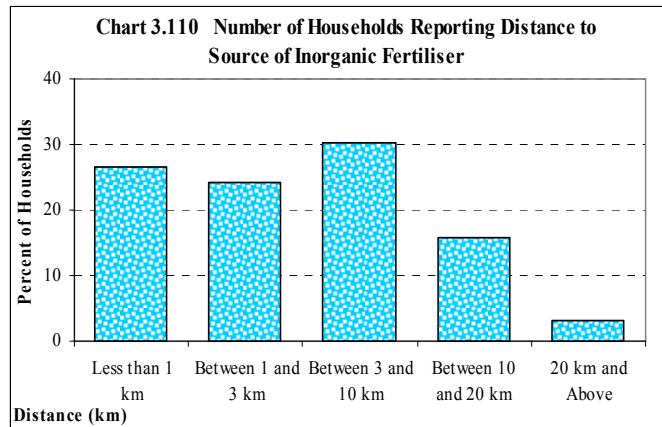


3.9.2 Inorganic Fertilisers

Smallholders that use inorganic fertiliser in Kilimanjaro mostly purchase from local market/trade store (91.6% of the total number of inorganic fertiliser users) followed by cooperative (4.8%), local farmers group (0.9 %) and the rest sum up to (2.9%) (Chart 3.109).



Access to inorganic fertiliser is mainly less than 10 km from the household with most households residing between 1 and 3 km (30 %) followed by less than 1 km from the source (27%) and between 1 and 3 km (24%) (Chart 3.110). Due to the very small number of households using inorganic fertilisers coupled with the small number of households responding to “not available”(3%) as the reason for not using,

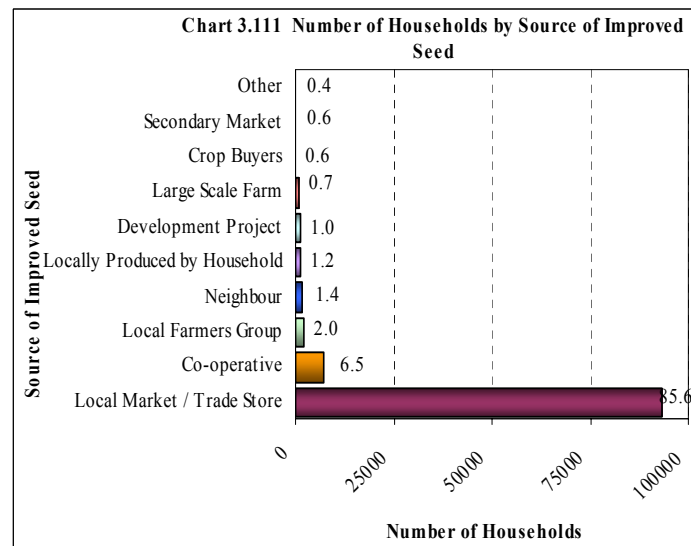


it may be assumed that access to inorganic fertiliser is not the main reason for not using it. Other reasons such as cost are more important with 76 percent of households responding to cost factors as the main reason for not using inorganic fertilizers. In other words, it is assumed that if the cost was affordable the demand would be higher and access to inorganic fertiliser would be made more available.

More smallholders use inorganic fertilisers in Moshi Rural than in other districts in Kilimanjaro region (46% of households using inorganic fertilisers), followed by Hai (37%), Rombo (9%), Same (7%) and Mwanga (2%).

3.9.3 Improved Seeds

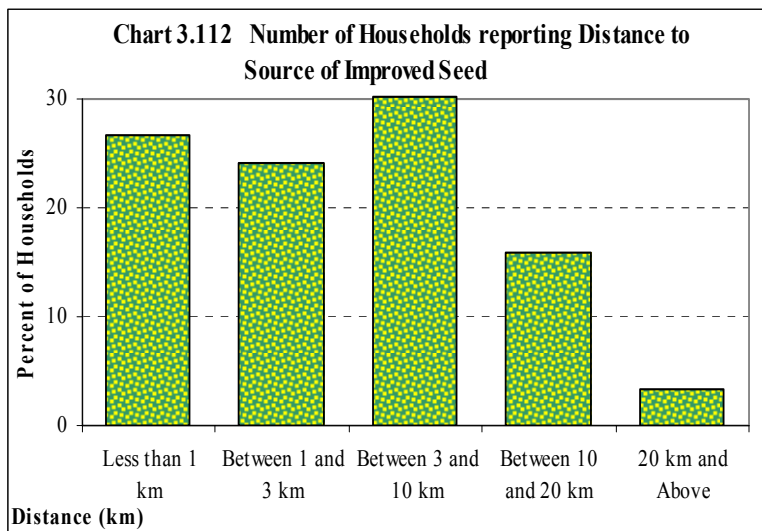
The proportion of households that used improved seeds was 50 percent of the total number of crop growing households. Most of the improved seeds were from the local market/trade store (85.6%). Other less important sources of improved seed are from cooperative (6.5%), local farmers group (2.0%), neighbour (1.4%), locally produced by household (1.2%), development project (1.0%) and the remaining sum up to (2.3%). (Chart 3.111).



Access to improved seed is better than access to chemical inputs with 27 percent of households obtaining the input within 1 km of the household (Chart 3.112).

This is in line with the higher use of improved seed compared to other chemical inputs, which further supports the concept that it is not the availability that is the main issue in the use of inputs but rather other factors such as cost.

The district that used improved seeds are Moshi Rural (32 percent of the total number of households used improved seeds), followed by Rombo (26%), Hai (26%), Same (10%) and Mwanga (6). (Map 3.34).



3.9.4 Insecticides and Fungicide

Most smallholder households using insecticides and fungicides mainly purchase them from local markets/trade stores (75.7% of the total number of fungicide users). Other sources of insecticides/fungicides are of minor importance (Chart 3.113).

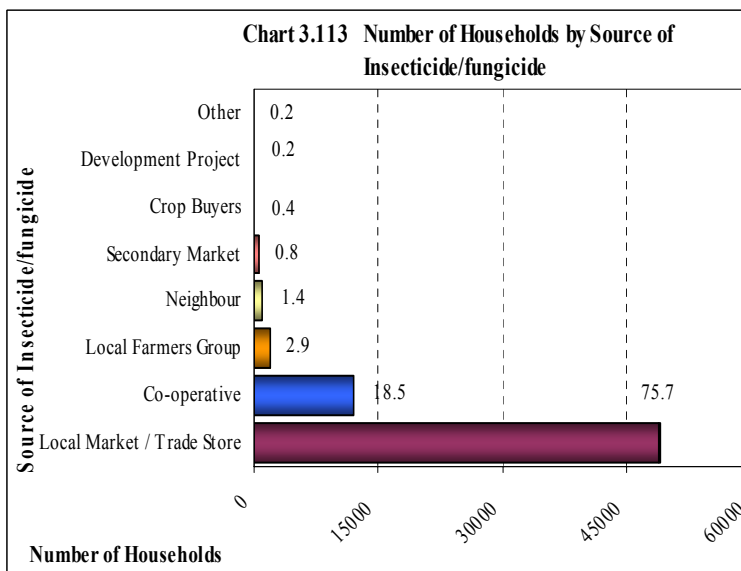
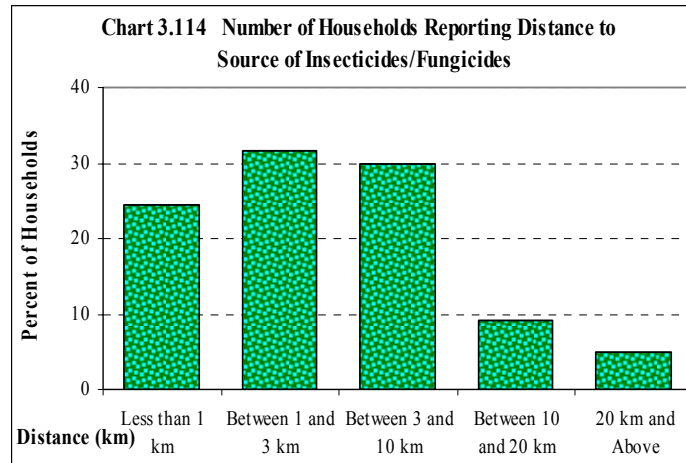


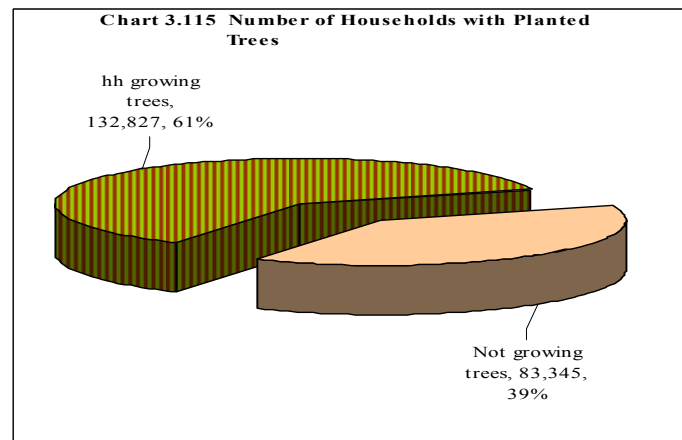
Chart 3.114 shows that there is no distinct pattern for the number of households with varying distances from the source of insecticide/fungicide. The small number of households using insecticides/fungicides coupled with the 4 percent of households responding to “not available” as the reason for not using it may be assumed that access is not the main reason for not using. Other reasons such as cost are more important with 73

percent of households responding to cost factors as the main reason for not using. In other words, it is assumed that if the cost was affordable, the demand would be higher and access to insecticides/fungicides would be made more available. Fungicide is used more in Rombo district (61 percent of the total number of households used fungicides), followed by Hai (35%), Same (26%), Mwanga (19%) and Moshi Rural (14%).



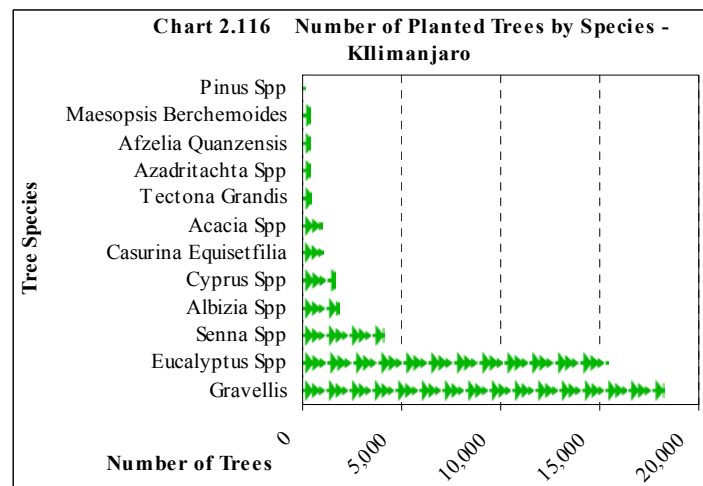
3.10 Tree Planting

The number of households involved in tree farming was 132,827 representing 61 percent of the total number of agriculture households (Chart 3.115).

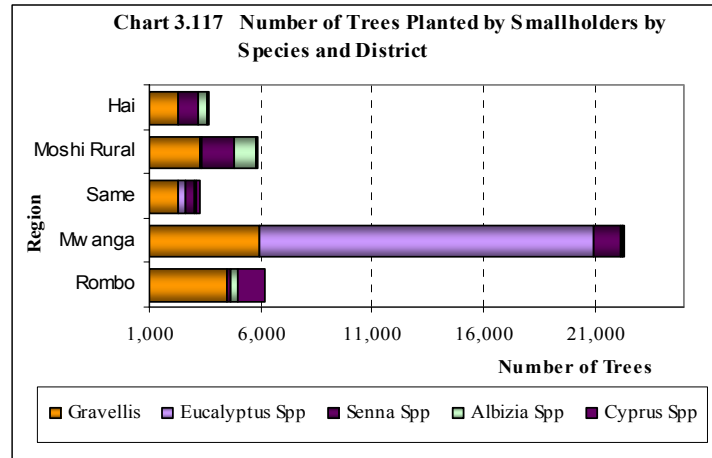


The number of trees planted by smallholders on their allotted land was 45,827 trees. The average number of trees planted per household planting trees was 35 trees.

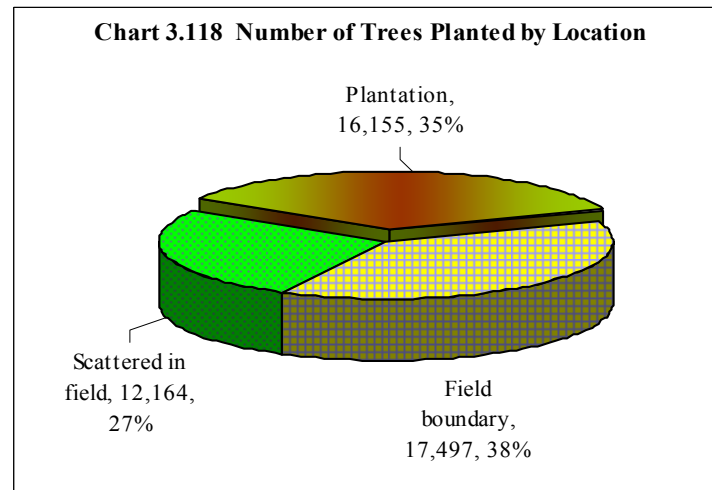
The main species planted by smallholders is Gravellis (18,252 trees, 40%), followed by Eucalyptus spp (15,505 trees, 34%), senna spp (4,080 trees, 4%), Albizia species (1,837 trees, 4%) and Cyprus (1,632 trees, 2%). The remaining trees species are planted



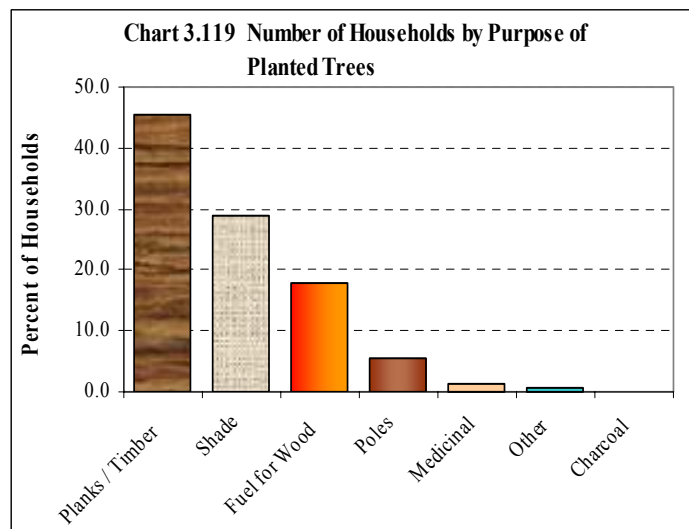
in comparatively small numbers (Chart 3.116). Mwanga district has the largest number of smallholders with planted trees than any other district (53%) which is dominated by Gravellis species. This is followed by Moshi Rural (15%) dominated by Gravellis species and to a lesser extent Senna, then Rombo (14%), Hai (9%) and Same (8%) which are mainly planted with Gravellis and Senna species respectively (Chart 3.117 and Map 3.35.).

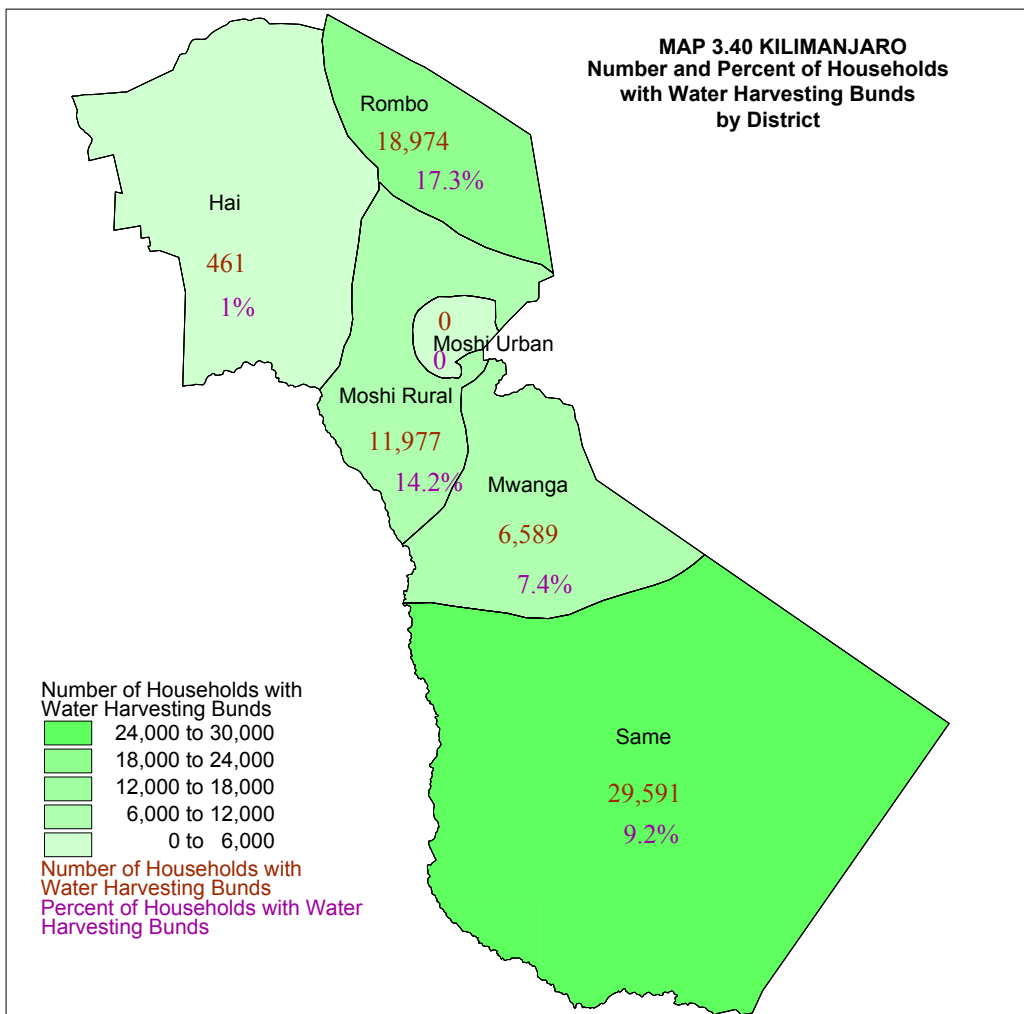
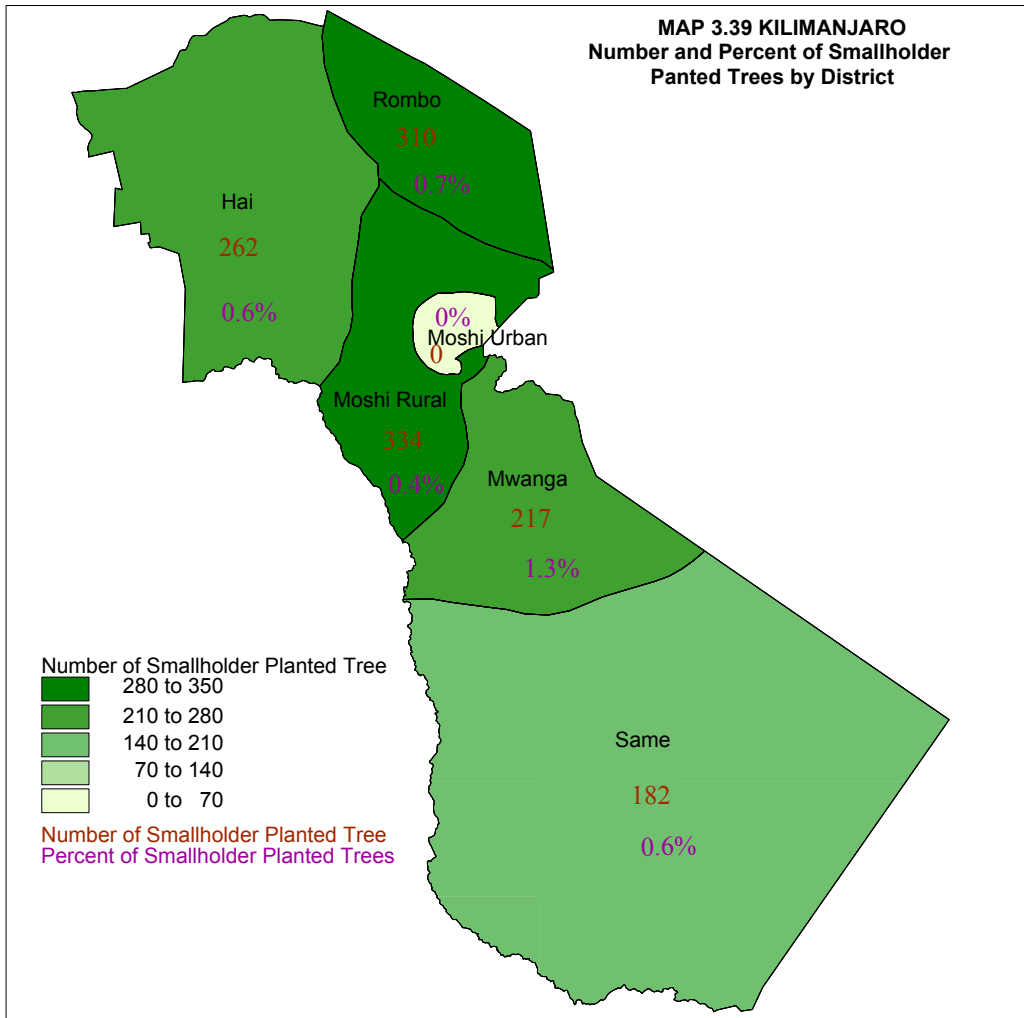


Smallholders mostly plant trees on the boundary of fields. The proportion of trees planted on field boundaries is 38 percent, followed by plantation or coppice (35%) and scattered around fields (27%) (Chart 3.118).



The main purpose of planting trees is to obtain planks/timber (45.5%). This is followed by shade (28.7%), wood for fuel (17.8%), poles (5.6%), medicinal (1.4%), charcoal (0.1%) and other uses (0.8%) (Chart 3.119).

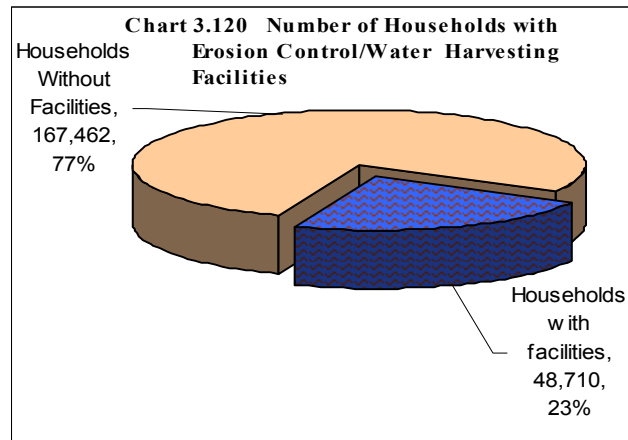




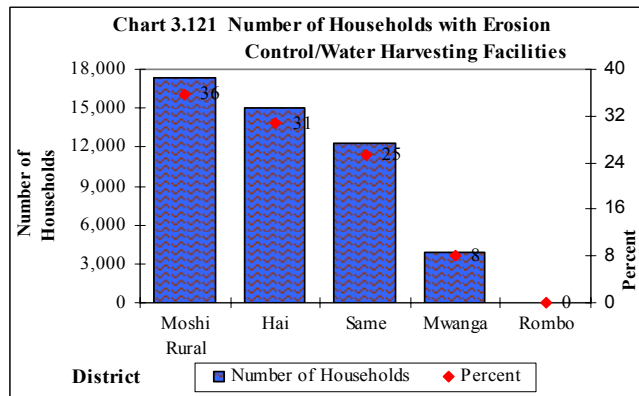
3.10 Irrigation and Erosion Control Facilities

Erosion control and water harvesting facilities are grouped together as they normally have dual purposes of reducing erosion and increasing the amount of water available for crop production.

The number of agricultural households that had soil erosion and water harvesting facilities on their farms was 48,710 which represent 23 percent of the total number of agricultural households in the region (Chart 3.120).



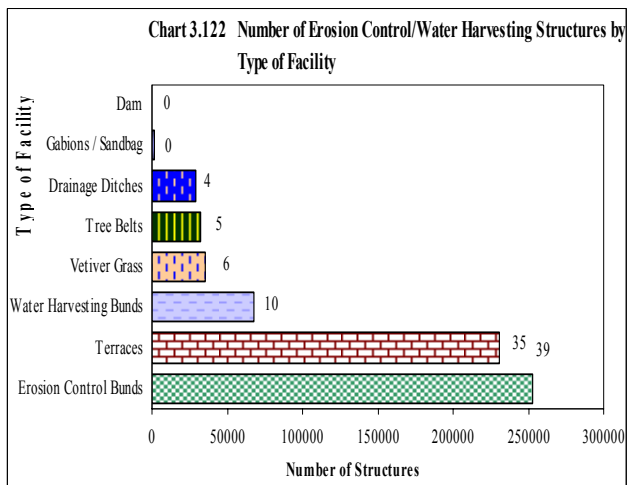
The proportion of households with soil erosion control and water harvesting facilities was highest in Moshi Rural district (36%) followed by Hai (31%), Same (25%), Mwanga (8%) and Rombo had none. (Chart 3.121). Erosion control bunds accounted for 39 percent of the total number of structures, followed by terraces (35%), water harvesting bunds, vetiver grass (6%) (10%), tree belts (5%) and drainage ditches (4%) (Chart 3.122 and Map 3.36).



Erosion control bunds, terraces and water harvesting bunds together had 550,578 structures.

This represented 85 percent of the total structures in the region. The remaining 15 percentages were shared among the rest of the erosion control methods mentioned above.

Same and Rombo districts had 430,472 erosion control structures (66 percent of the total erosion structures in the region).



3.12 LIVESTOCK RESULTS

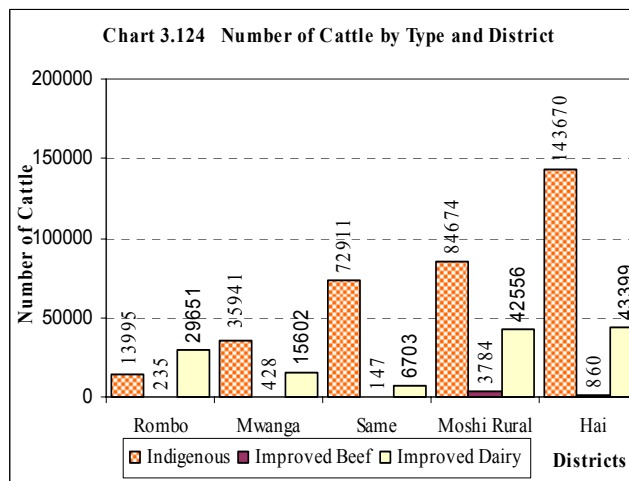
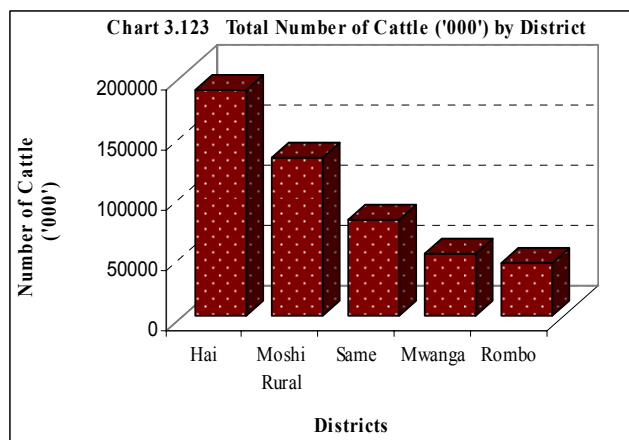
3.12.1 Cattle Production

The total number of cattle in the region was 494,555. Cattle are the dominant livestock type in the region followed by goats, sheep and pigs. The region had 3 percent of the total cattle population on Tanzania Mainland.

3.12.1.1 Cattle Population

The number of indigenous cattle in Kilimanjaro region was 351,191 (71 % of the total number of cattle in the 5,454 cattle (1%) were beef breeds.

The census results show that 128,484 agricultural households in the region (81% of total agricultural households) kept 0.49 million cattle. This was equivalent to an average of 4 heads of cattle per cattle-keeping-household. The district with the largest number of cattle was Hai which had about 187,930 cattle (38% of the total cattle in the region). This was followed by Moshi Rural (131,013 cattle, 26%), Same (79,761 cattle, 16%), Mwanga (51,971 cattle, 11%) and Rombo (43,880 cattle, 6%) (Chart 3.123 and Map 3.37) However, Moshi Rural district had the highest density (234 head per km²) (Map 3.38).



Although Hai district had the largest number of cattle in the region, most of them were indigenous. The number of dairy cattle was very small and the number of beef cattle was insignificant (Chart 3.124).

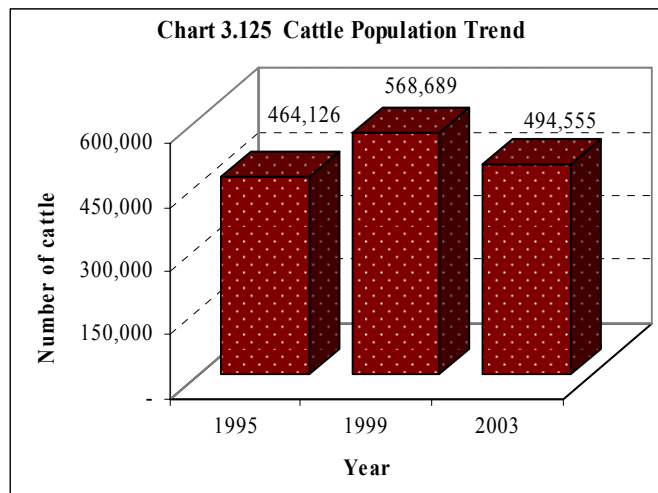
3.12.1.2 Herd Size

Ninety one percent of the cattle-rearing households had herds of size 1-5 cattle with an average of two cattle per household. Herd sizes of 6-30 accounted for about 8 percent of all cattle in the region. Only 0.5 percent of the cattle rearing households had herd sizes of 31- 100 cattle. About 91 percent of total cattle rearing households had herds of size 1-30 cattle and owned 74 percent of total cattle in the region, resulting in an average of 3 cattle per cattle rearing household. There were about 101 households with a herd size of more than 151 cattle each (81,616 cattle in total) resulting in an average of 807 cattle per household.

3.12.1.3 Cattle Population Trend

Cattle population in Kilimanjaro region increased during the period of eight years from 464,126 in 1995 to 494,555 cattle in 2003. This trend depicts an overall annual negative growth rate of 0.80 percent (Chart 3.125).

There was an increase in number of cattle for the period of four years from 1995 to 1999 at the rate of 5.21 percent whereby the number increased from 464,126 to 568,689. The number of cattle then decreased from 568,689 in 1999 to 494,555 in 2003 at the rate of -3.43 percent.

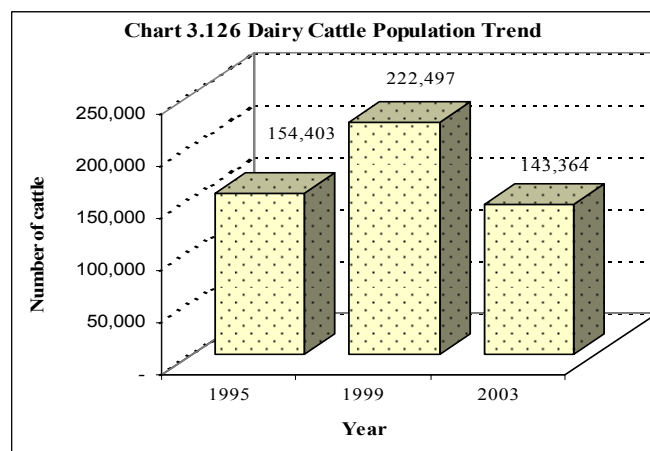


3.12.1.4 Improved Cattle Breeds

The total number of improved cattle in Kilimanjaro region was 143,364 (137,910 dairy and 5,454 improved beef). The dairy cattle constituted 28 percent of the total cattle and 96 percent of improved cattle in the region. The number of beef cattle in the region constituted 1 percent of the improved cattle in the region. The number of improved cattle decreased from 154,403 in 1995 to 143,364 in 2003 at an annual growth rate of

-0.92 percent. The growth rate was higher for the period from 1995 to 1999 (9.56%) then there was a sharp decrease from 1999 to 2003

(-10.41%) (Chart 126)

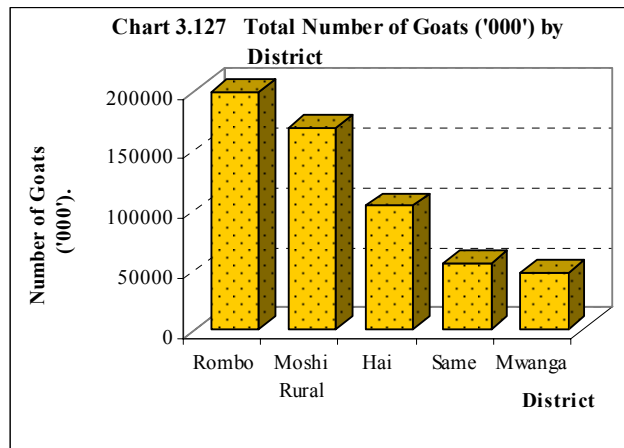


3.12.2. Goat Production

Goat rearing was the second most important livestock keeping activity in the region followed by sheep and pig rearing. In terms of total number of goats on the Mainland, Kilimanjaro region ranked 10th out of the 21 regions with 5 percent of the total goats on the Mainland.

3.12.2.1 Goat Population

The number of goat-rearing-households in Kilimanjaro region was 103,017 (65% of all agricultural households in the region) with a total of 572,577 goats giving an average of 6 head of goats per goat-rearing-household. Rombo had the largest number of goats (198,082 goats, 35% of all goats in the region), followed by Moshi Rural (168,107 goats, 29%), Hai (103,077 goats, 18%), Same (55,561 goats, 10%) and Mwangi (47,751 goats, 8%). (Chart 3.127 and Map 3.39). However Rombo district had the highest density (453 head per km²) (Map 3.40).



3.12.2.2 Goat Herd Size

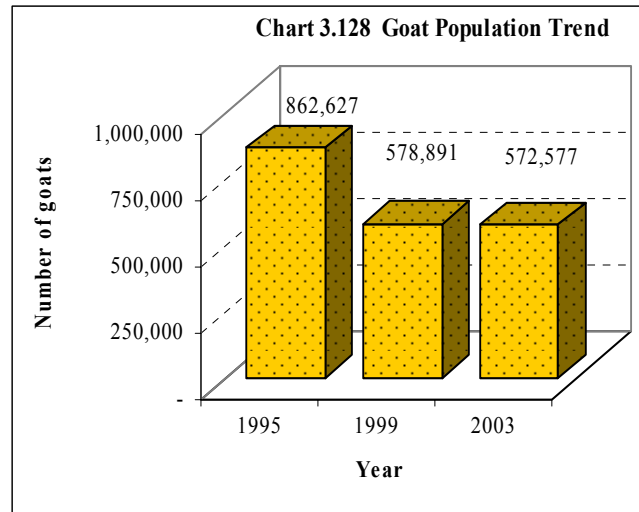
Sixty percent of the goat-rearing households had herd size of 1-4 goats with an average of 3 goats per goat rearing household. Ninety six percent of total goat-rearing households had herd size of 1-14 goats and owned 73 percent of the total goats in the region resulting in an average of 4 goats per goat-rearing households.

3.12.2.3 Goat Breeds

Goat husbandry in the region was dominated by the indigenous breeds that constituted 92 percent of the total goats in Kilimanjaro region. Improved goats for beef and dairy constituted of 3 and 5 percent of total goats respectively.

3.12.2.4 Goat Population Trend

The overall annual growth rate of goat population from 1995 to 2003 was -4.99 percent. This negative trend implies eight years of population decrease from 862,627 in 1995 to 572,577 in 2003. The number of goats decreased from 862,627 in 1995 at an estimated annual rate of -9.49 percent to 578,891 in 1999. From 1999 to 2003, the goat population decreased at an annual rate of -0.27 percent (Chart 128).

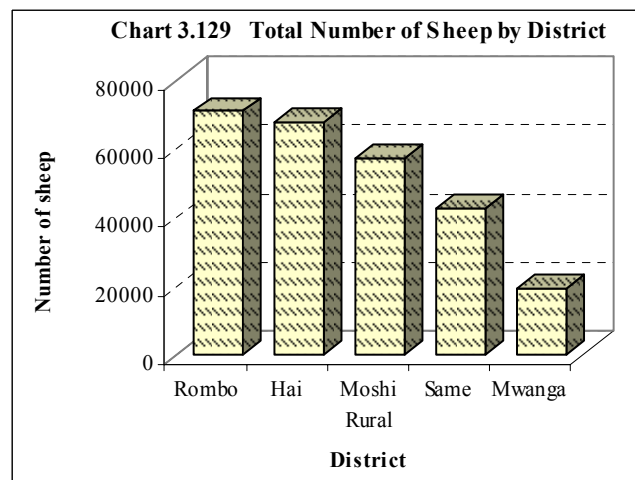


3.12.3. Sheep Production

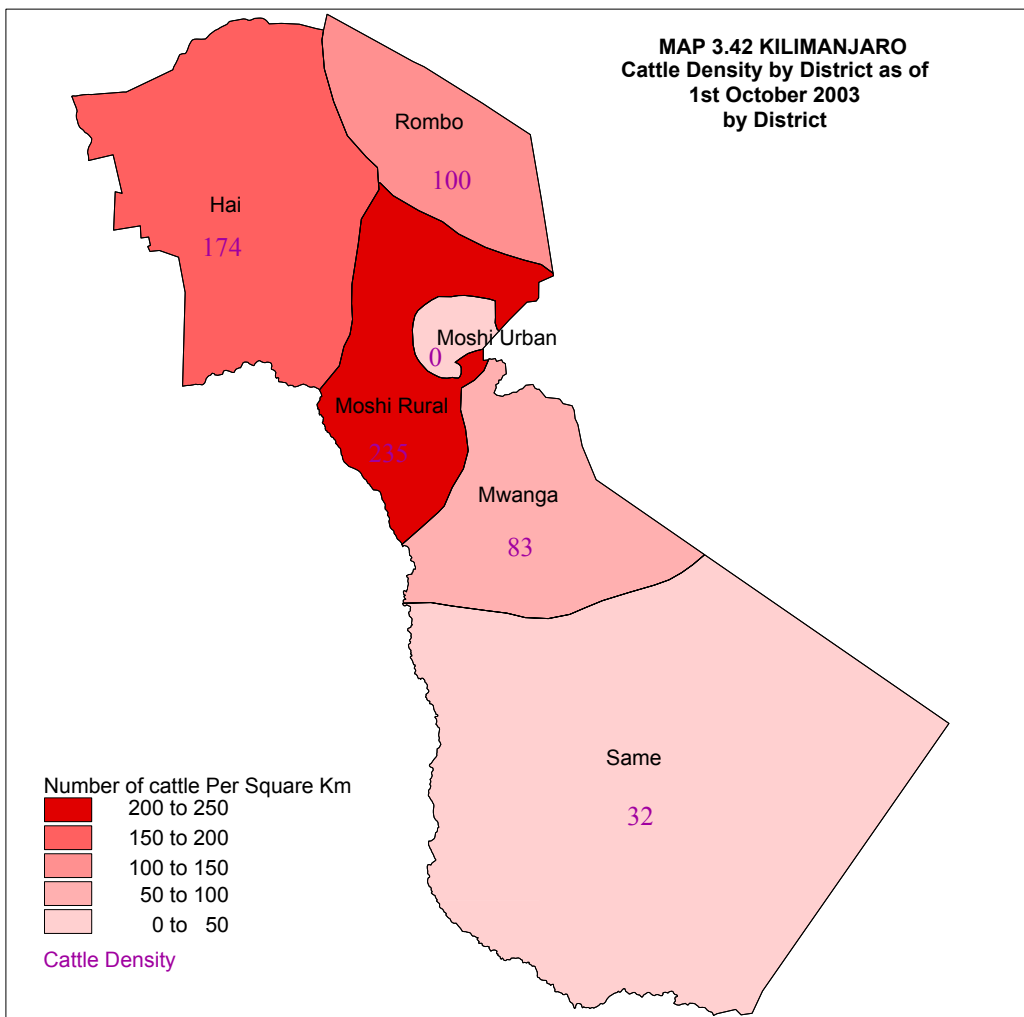
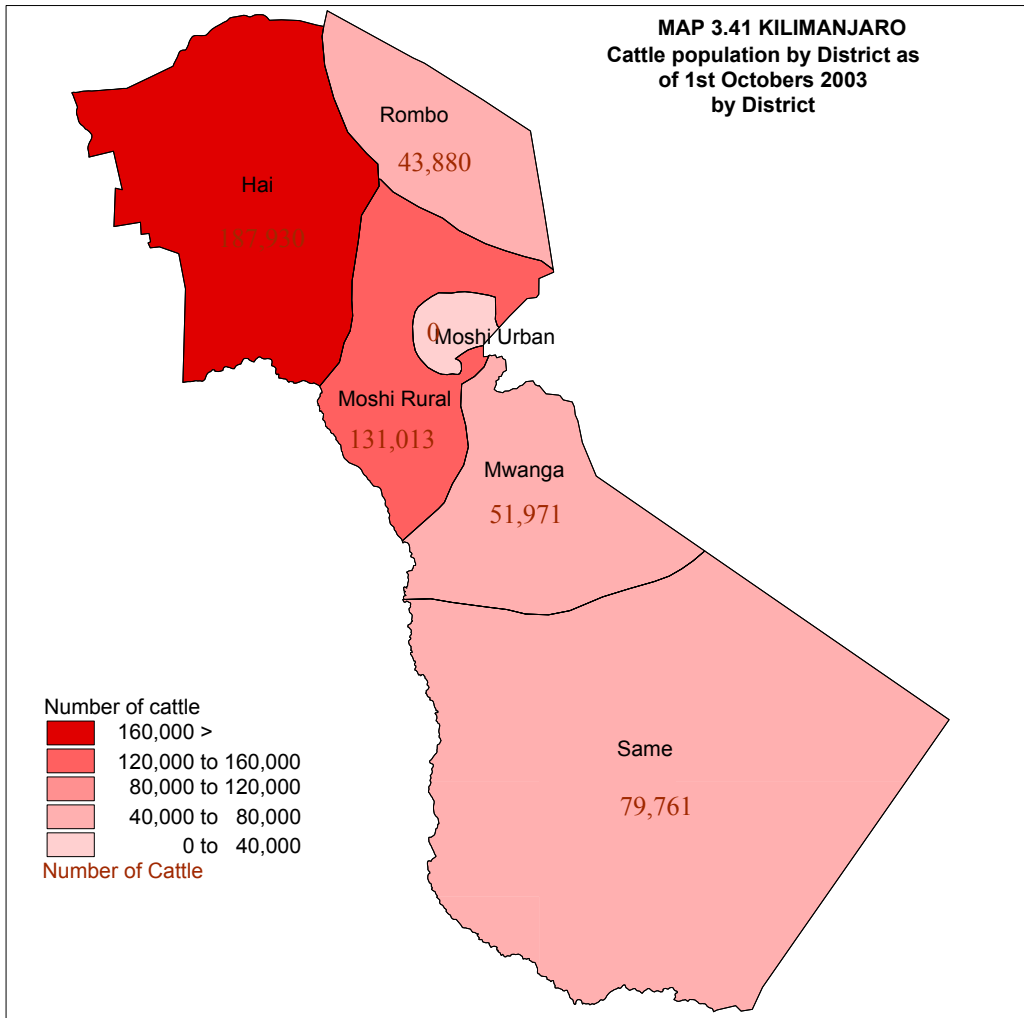
Sheep rearing was the third important livestock keeping activity in Kilimanjaro region after cattle and goats. The region ranked 5 out of 21 Mainland regions and had 7 percent of all sheep on Tanzania Mainland.

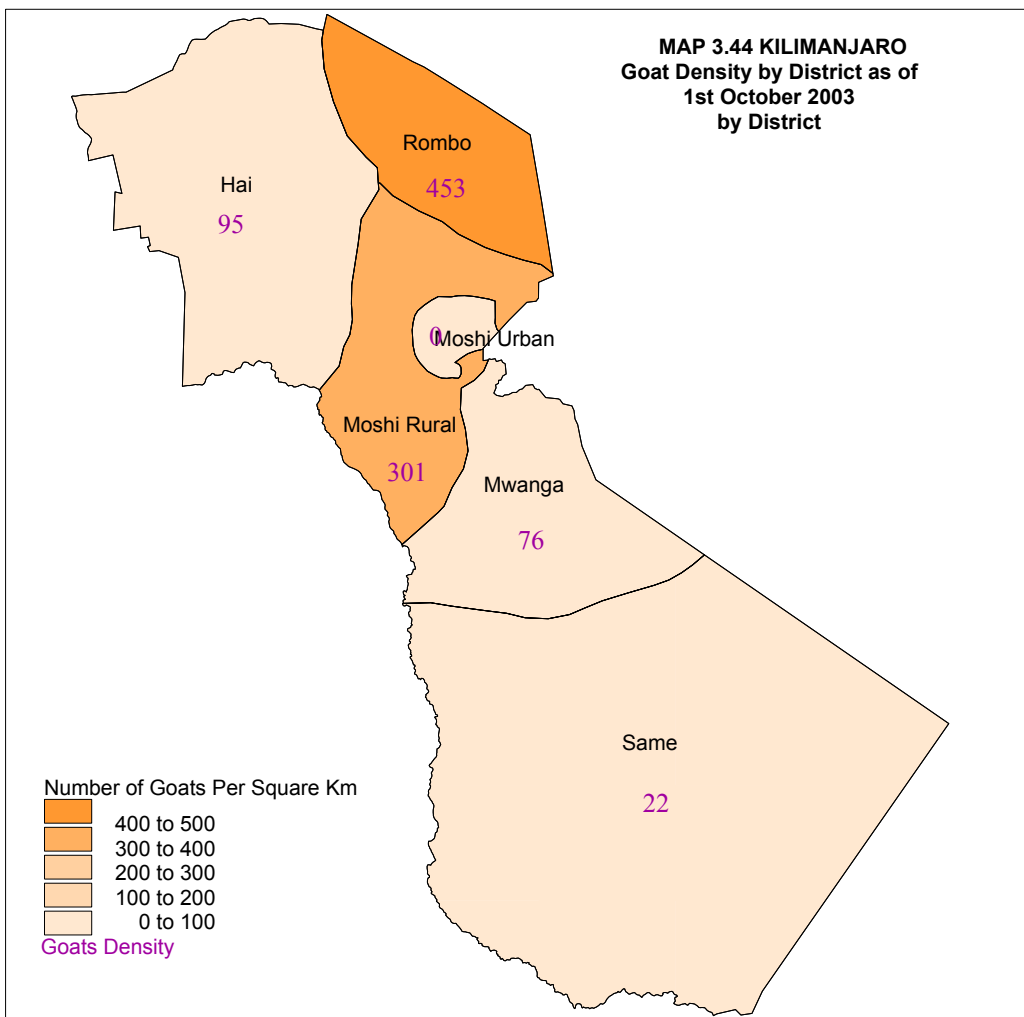
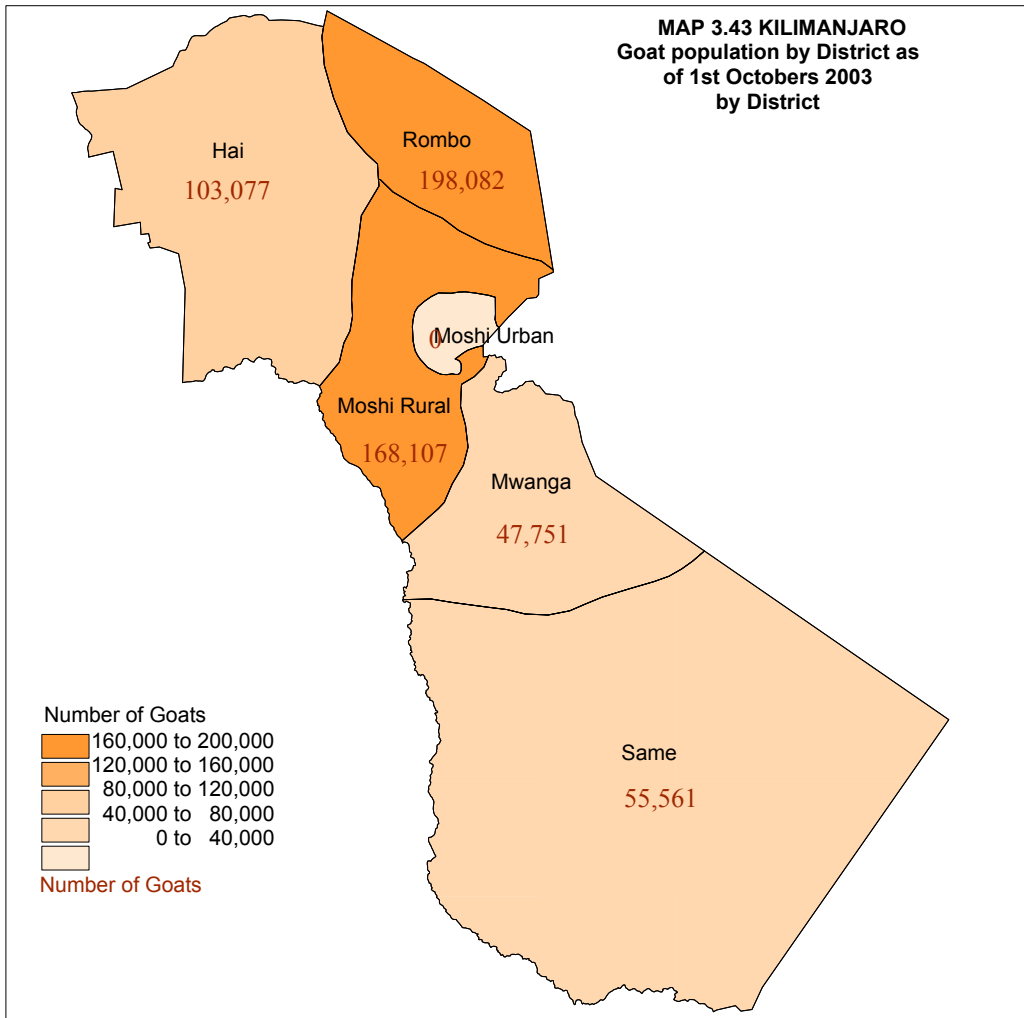
3.12.3.1 Sheep Population

The number of sheep-rearing households was 63,696 (40% of all agricultural households in Kilimanjaro region) rearing 257,260 sheep, giving an average of 4 heads of sheep per sheep-rearing household. The district with the largest number of sheep was Rombo with 70,905 sheep (28% of total sheep in Kilimanjaro region) followed by Hai (67,494 sheep, 26%), Moshi Rural (57,156 sheep, 22%), Same (42,457 sheep, 17%) and Mwanga (19,248 sheep, 7%) and Map 3.41). Rombo district also had the highest density (162 head per km²) (Map 3.42).



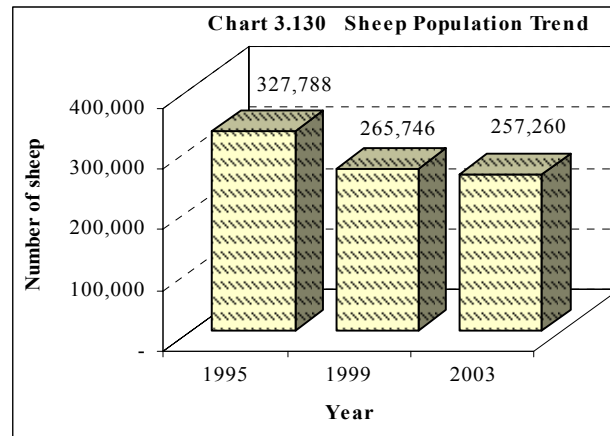
Sheep rearing was dominated by indigenous breeds that constituted 96 percent of all sheep kept in the region. Only 4 percent of the total sheep in the region was made up of improved mutton.





3.12.3.2 Sheep Population Trend

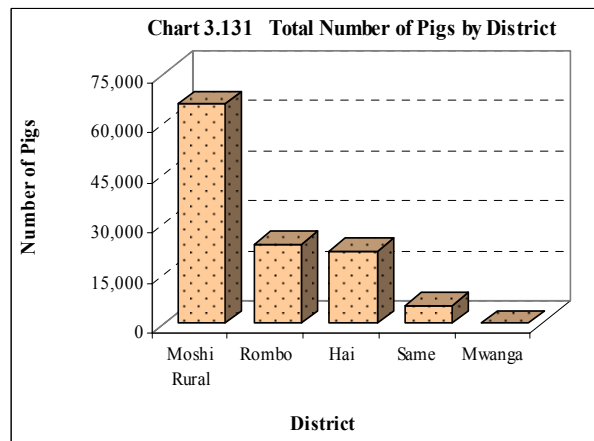
The overall annual growth rate of the sheep population for the eight year period from 1995 to 2003 is estimated at -2.96 percent. The population decreased at an annual rate of -5.11 percent from 327,788 in 1995 to 265,746 in 1999. From 1999 to 2003, sheep population decreased at an annual rate of -2.96 percent (Chart 3.130).



3.12.4. Pig Production

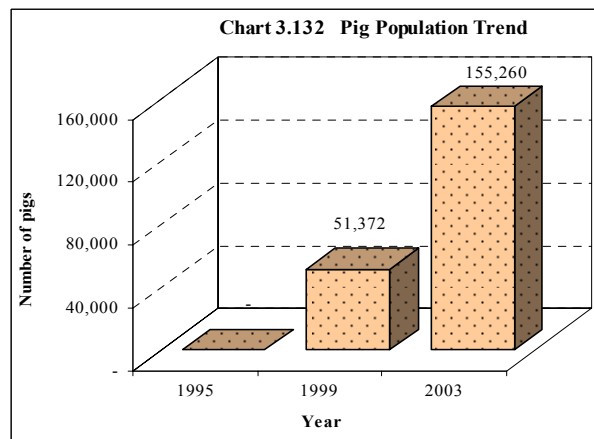
Piggery is the least important livestock keeping activity in the region after cattle, goats and sheep. The region ranks 3rd out of 21 Mainland regions and is 14 percent of the Mainland total pigs.

The number of pig-rearing agricultural households in Kilimanjaro region was 32,844 (21% of the total agricultural households in the region) rearing 116,877 pigs. This gives an average of 4 pigs per pig-rearing household. The district with the largest number of pigs was Moshi Rural with 65,761 pigs (56% of the total pig population in the region) followed by Rombo (23,872 pigs, 20%), Hai (21,796 pigs, 19%), Same (5,317 pigs, 5%) and Mwanga (131 pig, 0.1%) (Chart 3.131 and Map 3.44). However Moshi Rural district had the highest density (118 head per km²) (Map 3.43).



3.12.4.1 Pig Population Trend

There was no pig population recorded in 1995. The record available was from 1999. The pig population increased from 51,372 in 1999 to 155,070 in 2003 at a high rate of 31.8 percent. (Chart 3.132).



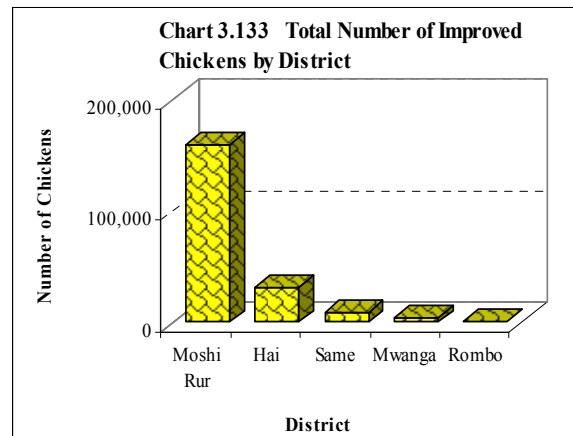
3.12.5 Chicken Production

The poultry sector in Kilimanjaro region was dominated by chicken production. The region contributed 5.0 percent to the total chicken population on Tanzania Mainland.

3.12.5.1 Chicken Population

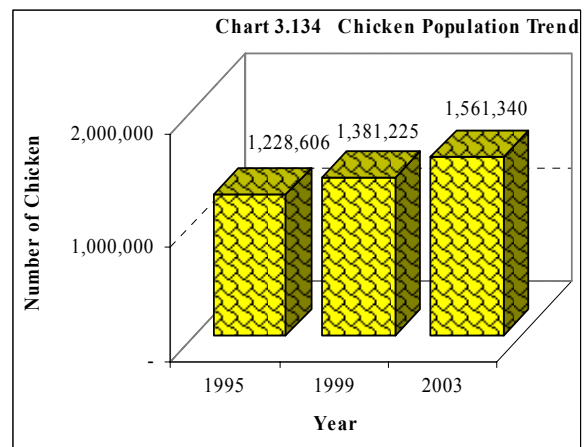
The number of households keeping chicken was 155,587 raising about 1,561,340 chickens. This gives an average of 10 chickens per chicken-rearing household. In terms of total number of chickens in the country, Kilimanjaro region was ranked tenth out of the 21 Mainland regions.

The District with largest number of improved chickens was moshi Rural (160,481 chickens, 78% of the total number of improved chickens in the region) followed by Hai (31,078, 15.2%), Same (8,731, 4.3%), Mwanga (3,800, 1.9%) and Rombo (469, 0.2%) (Chart 3.133 and Map 3.45) However Hai district had the highest density (136 improved chickens per km²) (Map 3.46)



3.12.5.2 Chicken Population Trend

The overall annual chicken population growth rate during the eight-year period from 1995 to 2003 was 3.04 percent. The population increased at a rate of 1.49 percent from 1995 to 1999 after which the population further increased at a rate of 4.62 percent for the four year period from 1999 to 2003 (Chart 3.134).



Eighty seven percent of all chicken in Kilimanjaro region were of indigenous breed. The dominance of indigenous breed makes the population trend for the indigenous chicken more-or-less the same as that of the total chickens in the region.

3.12.5.3 Chicken Flock Size

The results indicate that about 81 percent of all chicken-rearing households were keeping 1-19 chickens with an average of 7 chickens per holder. About 9 percent of holders were reported to be keeping the flock size of 20 to 99 chickens with an average of 29 chickens per holder.

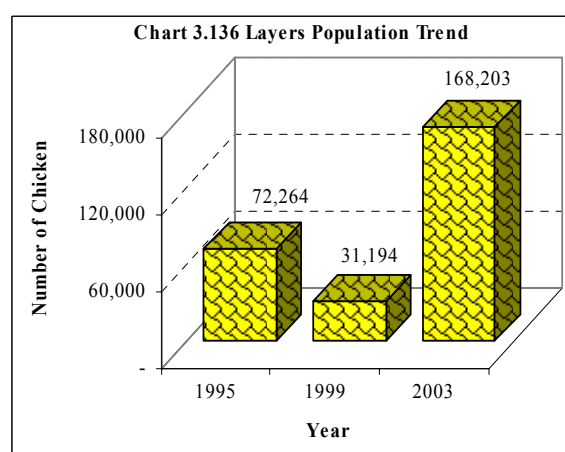
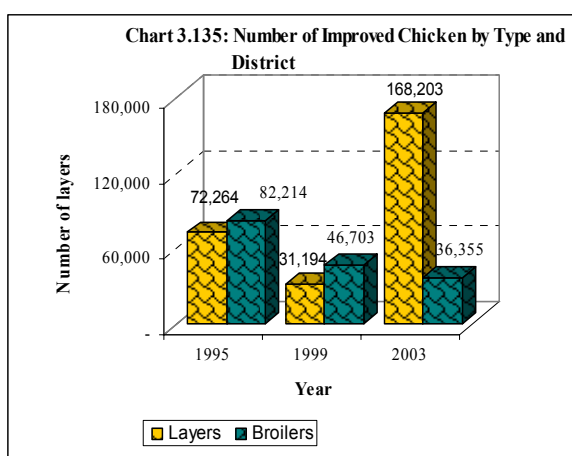
Only 0.3 percent of holders kept the flock sizes of more than 100 chickens at an average of 439 chickens per holder (Table 3.14).

Table 3.15 Number of Households and Chickens Raised by Flock Size

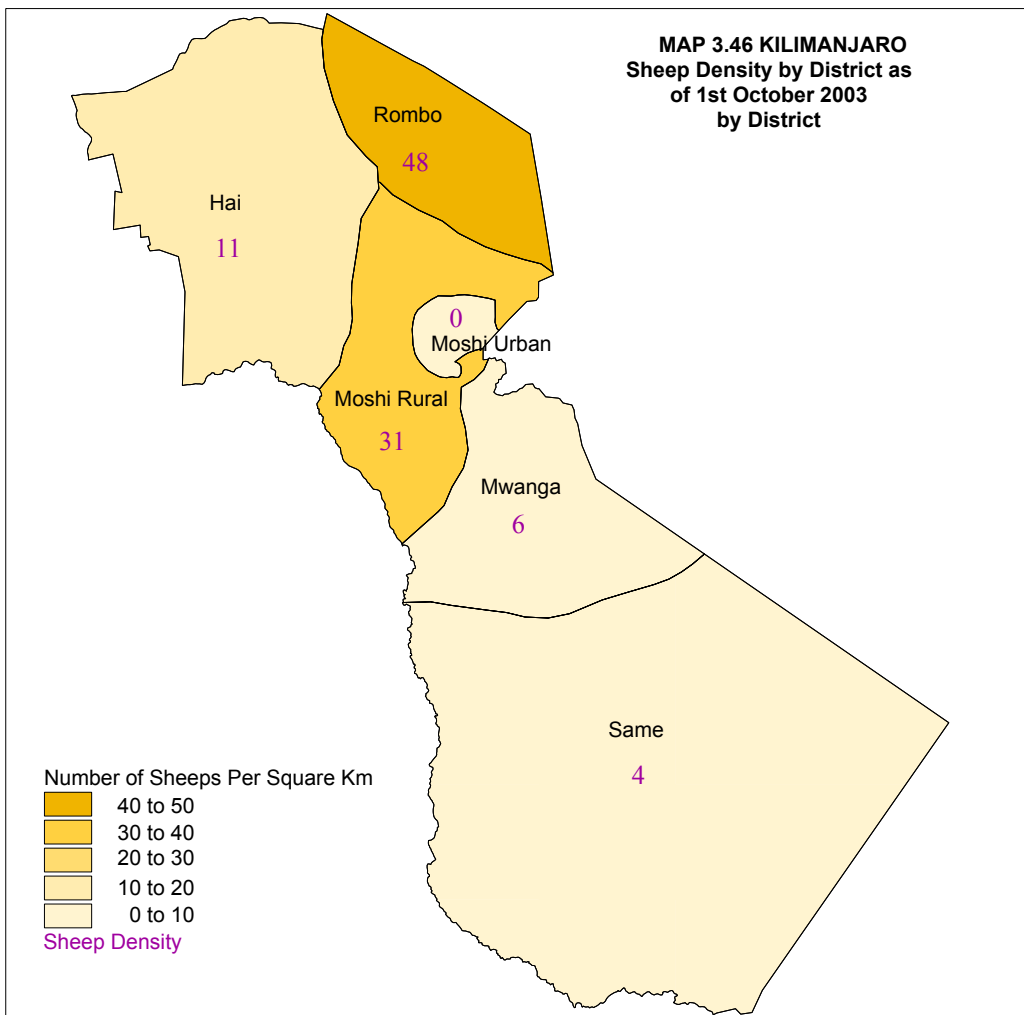
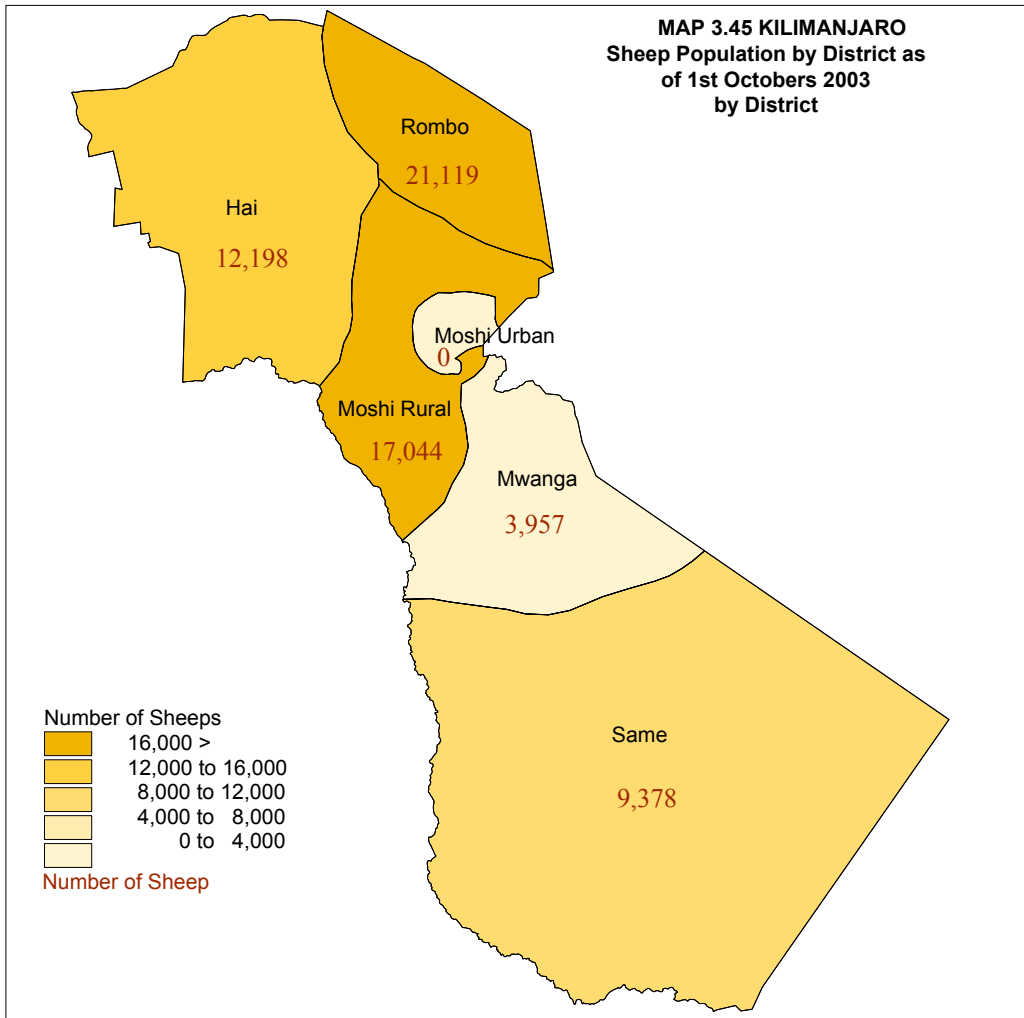
Flock Size	Number of Households	%	Number of Chickens	Average Chicken by Households
1 - 4	54,867	35	151,020	3
5 - 9	48,974	31	316,884	6
10 - 19	37,959	24	482,724	13
20 - 29	8,939	6	203,688	23
30 - 39	2,059	1	66,695	32
40 - 49	1,174	1	48,928	42
50 - 99	1,108	1	69,000	62
100+	507	0	222,401	439
Total	155,587	100	1,561,340	10

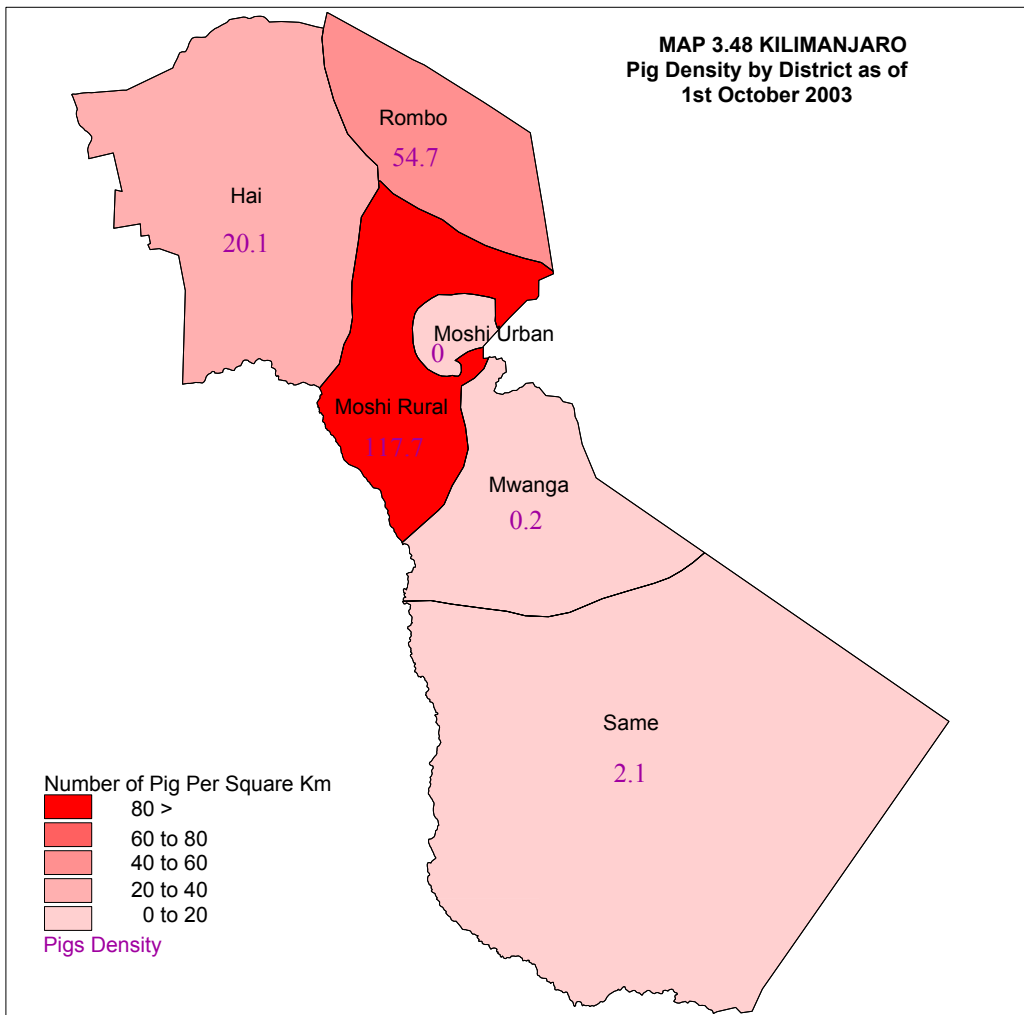
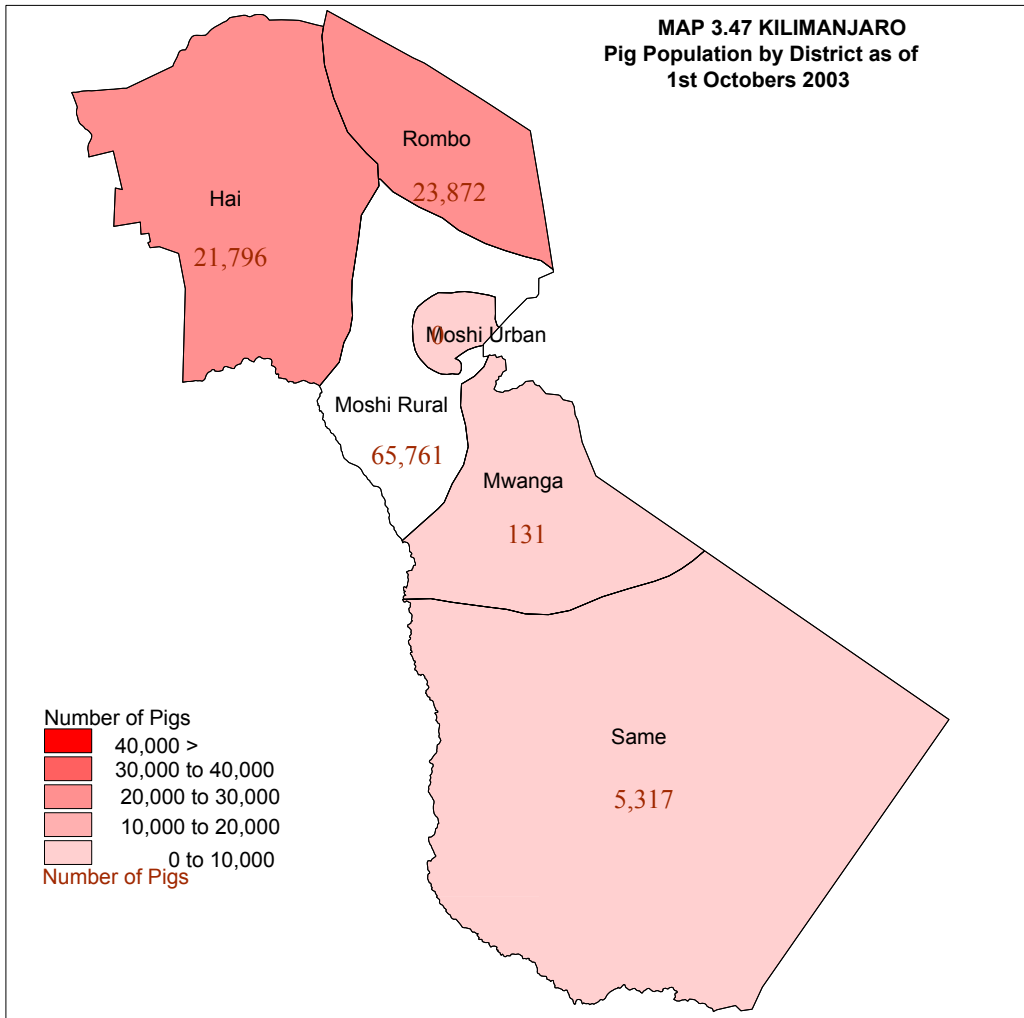
3.12.5.4 Improved Chickens (layers and broilers)

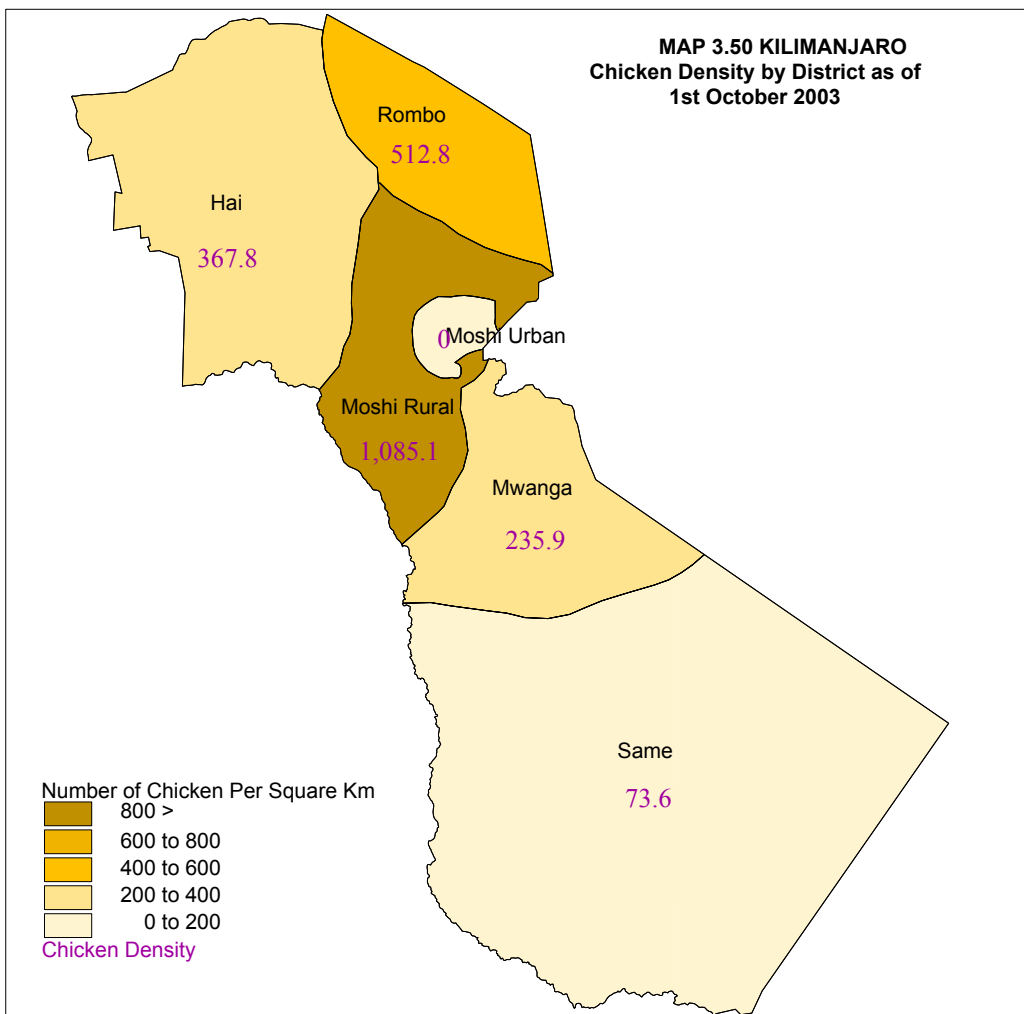
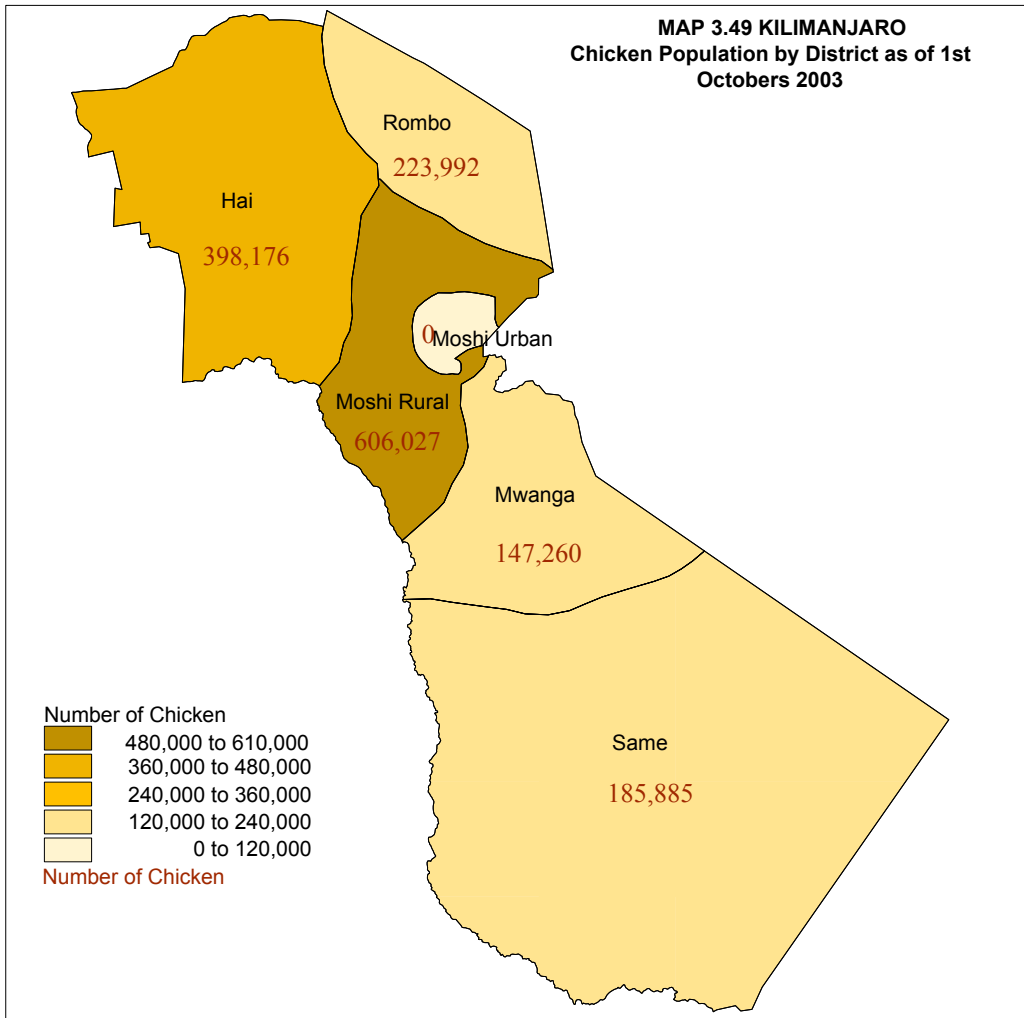
The overall annual broilers chicken population growth rate during the eight-year period from 1995 to 2003 was -9.70 percent. The population decreased at a rate of -13.18 percent from 1995 to 1999 after which the population further decreased at a rate of -6.0 percent for the four year period from 1999 to 2003 (Chart 3.135).



The overall annual layers chicken population growth rate during the eight-year period from 1995 to 2003 was 11.14 percent. The population decreased at a rate of 18.94 percent from 1995 to 1999 after which the population increased at a rate of 52.38 percent for the four year period from 1999 to 2003 (Chart 3.136).







3.12.6. Other Livestock

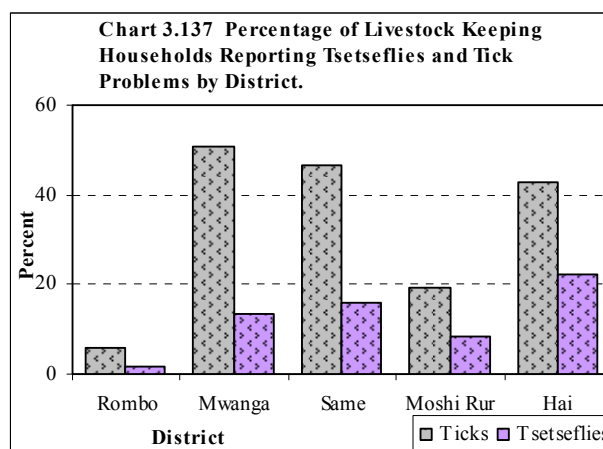
There were 42,319 ducks, donkeys, 36,929, turkeys, 3,194 and rabbits 310 raised by rural agricultural households in Kilimanjaro region. Table 3-16 indicates the number of livestock kept in each district. The biggest number of ducks in the region was found in Moshi Rural district (56% of all ducks in the region), followed by Rombo (25%), Mwanga (10%), Hai (6%) and Same (3%). Turkeys were reported in Moshi Rural and Mwanga districts only (Table 3.16).

Table 3.16 Number of Other Livestock by Type of Livestock and District

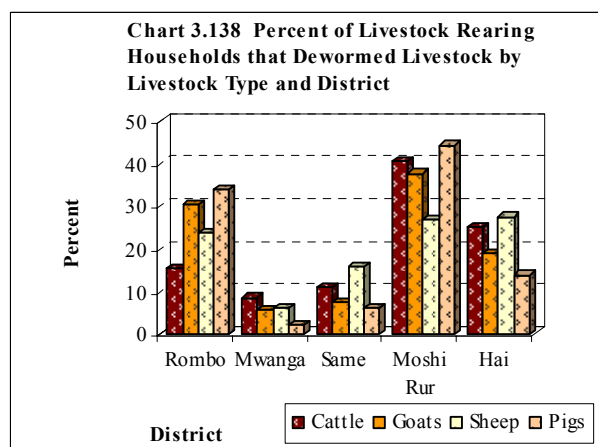
District	Type of Livestock				
	Ducks	Turkeys	Rabbits	Donkeys	Other
Rombo	10,664	0	0	1,715	924
Mwanga	4,326	1,079	43	23,405	169
Same	1,383	0	0	148	74
Moshi R	23,551	2,115	266	7,154	1,340
Hai	2,396	0	0	4,505	1,251
Total	42,319	3,194	310	36,929	3,758

3.12.7 Pest and Parasite Incidence and Control

The results indicate that 27 percent and 11 percent of the total livestock-keeping households reported to have encountered ticks and tsetse fly problems respectively. Chart 3.137 shows that there is a predominance of tick related diseases over tsetse related diseases. Incidences of both problems were highest in Mwanga district but lowest in Rombo district (Map 3.47).



The most practiced method of controlling ticks spraying with 70 percent of all livestock-rearing households in the region using the method. Other methods used were smearing (8%), dipping (3%) and other traditional methods like hand picking (5%). However, 14 percent of livestock-keeping households did not use any method.



The most common method used to control tsetse flies was spraying which was practiced by 56 percent of livestock-rearing households and dipping (3%), trapping (4%) and other traditional methods (1%). However, 36 percent of the livestock rearing households did not use any of the four aforementioned methods.

3.12.7.1 Deworming

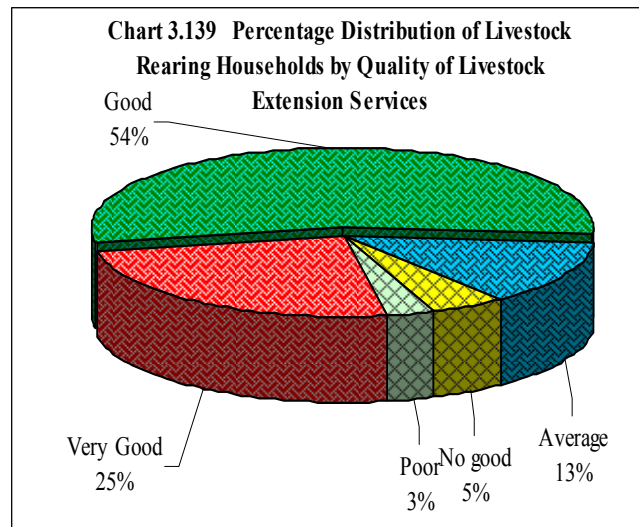
Livestock rearing households that dewormed their animals were 111,253 (71 % of the total livestock rearing households in the region). The percentage of the households that dewormed cattle was 58 percent, goats (36%), sheep (23%) and pigs (15%) (Chart 3.138)

3.12.8. Access to Livestock Services

3.12.8.1 Access to Livestock Extension Services

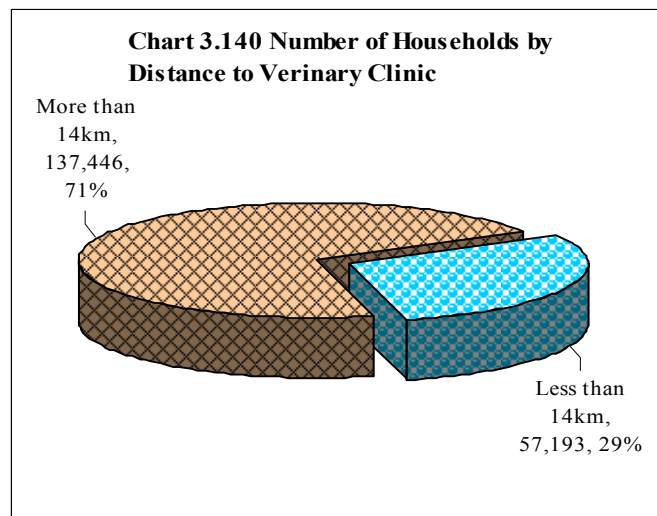
The total number of households that received livestock advice was 114,624, representing 100 percent of the total livestock-rearing households and 46 percent of the agricultural households in the region. The main livestock extension agent was the government which provided service to about 87 percent of all households receiving livestock extension services. The rest of the households got services from other service providers (13%).

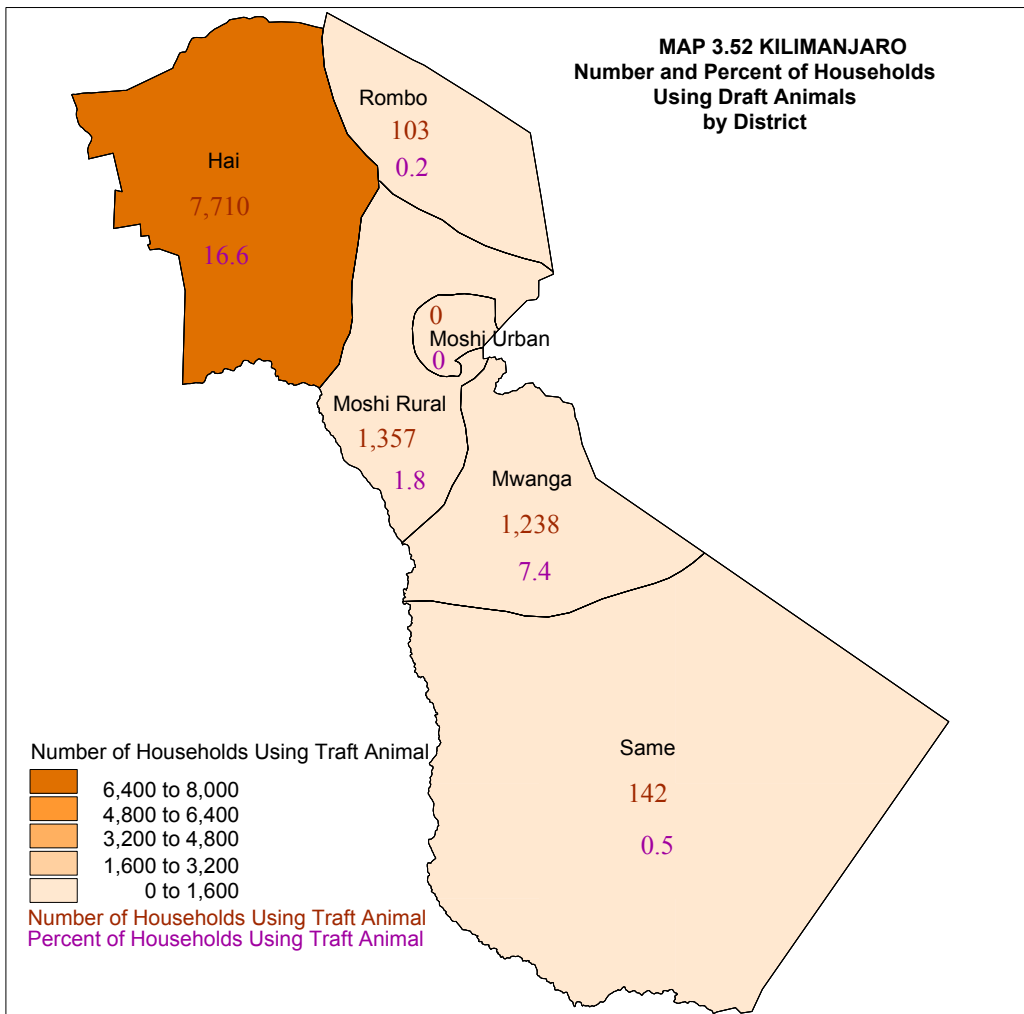
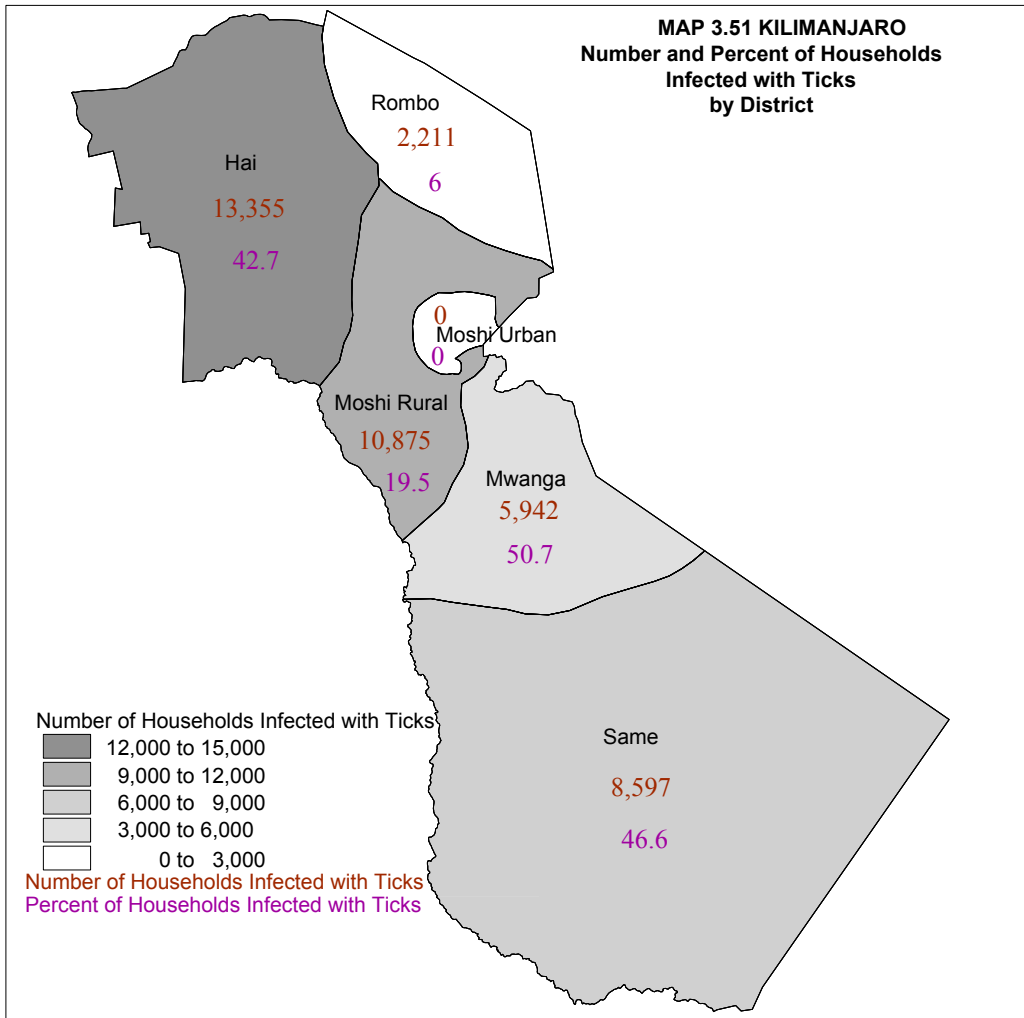
About 54 percent of livestock rearing households described the general quality of livestock extension services as being good, 25 percent said they were very good and 13 percent said they were average. However, 5 percent of the livestock rearing households said the quality was not good whilst 3 percent described them as poor (Chart 3.139).



3.12.8.2 Access to Veterinary Clinic

Many veterinary clinics were located very far from livestock rearing households. About 71 percent of the livestock rearing households accessed the services, at a distance of more than 14 kms. Only 29 percent of them accessed the services within 14 kms from their dwellings (Chart 3.140). The results show that only 9% of the livestock rearing households accessed the services at a distance less than 5 kilometers. (Chart 3.141).



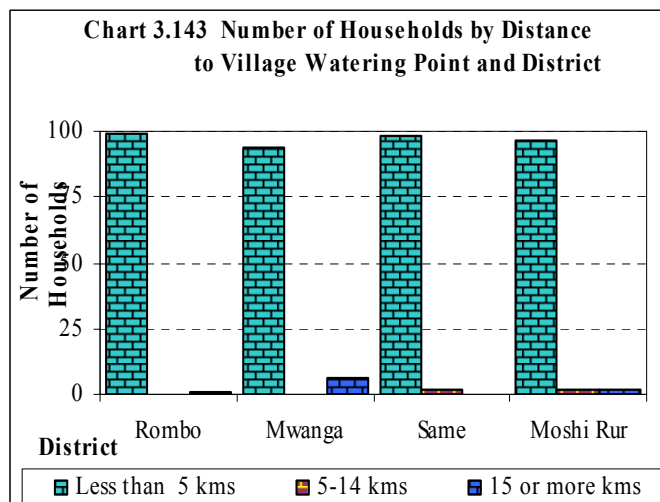
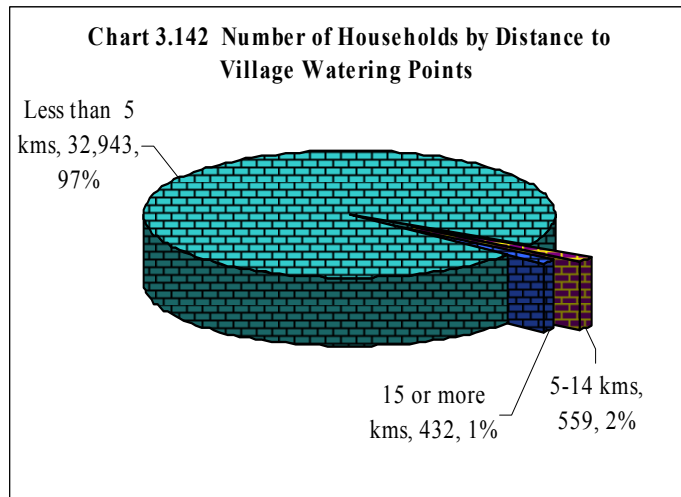
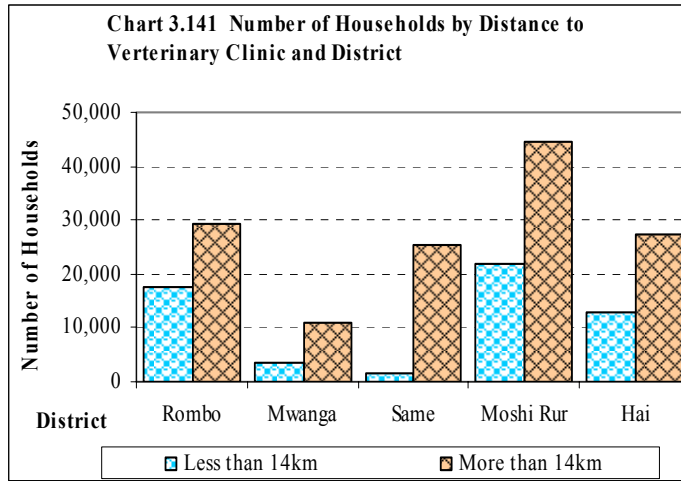


3.12.8.3 Access to Village Watering Points/dam

The number of livestock rearing households residing less than 5 kms from the nearest watering point was 32,943 (97% of livestock rearing households in Kilimanjaro region) whilst 559 households (2%) resided between 5 and 14 kms. However, 432 households (1%) had to travel a distance of 15 or more kms to the nearest watering point (Chart 3.142).

Rombo district had the best livestock water supply with the majority of livestock rearing households residing within 5 kms

from the nearest watering point. This is followed by Moshi Rural, Same, Hai and Mwanga districts. Only 3% of the livestock rearing households in the region had to travel a distance of more than five kilometers to the nearest watering point (Chart 3.143).

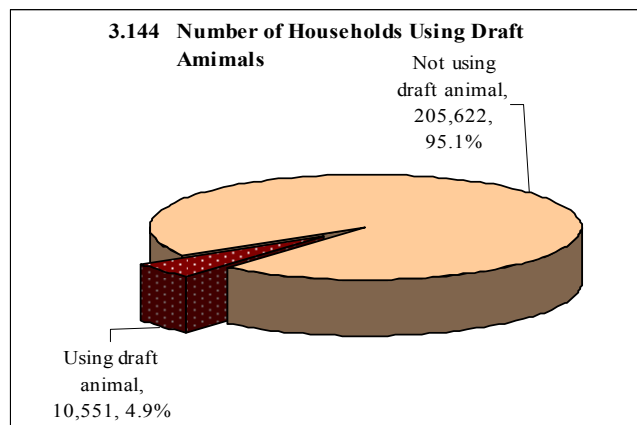


3.12.9. Animal Contribution to Crop Production

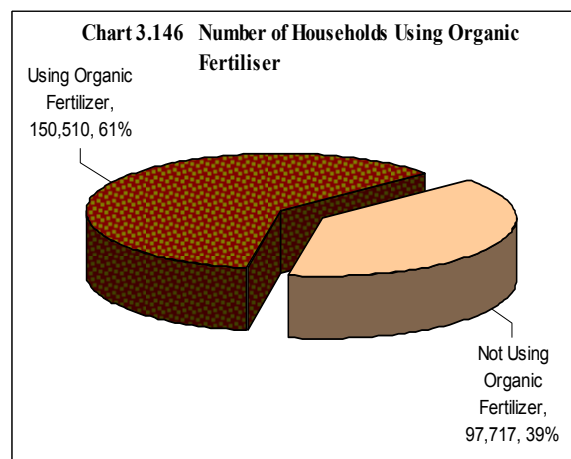
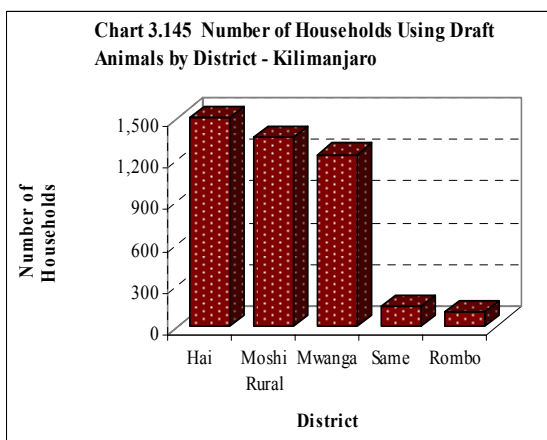
3.12.9.1 Use of Draft Power

Use of draft animals to cultivate land in Kilimanjaro region is encouraging with 10,551 households (4.9% of the total households in the region) using them (Chart 3.144).

The number of households that used draft animals in Hai district was 7,710 (73% of the households using draft animals in the region). In Moshi Rural district the number of households using draft animals was 1,357 (13%), Mwangi (1,238 households, 12%), Same (142 households 1%) and Rombo (103 households, 1%) (Chart 3.145 and Map 3.48)



The region had 11,759 oxen that were used to cultivate 9,987 hectares of land. This represents only 05 percent of the total oxen found on the Mainland. The largest area cultivated using oxen was found in Hai district (7,825 ha, 78% of the total area



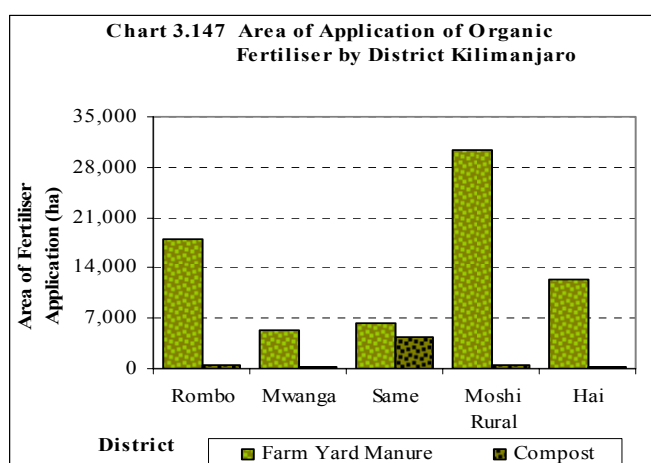
cultivated using oxen).

3.12.9.2.1 Use of Farm Yard Manure

The number of Households using organic fertilizer in Kilimanjaro region was 150,510 (61% of total crop growing households in the region) (Chart 3.146). The total area applied with organic fertiliser was 78,267 ha or 76% of the area planted with annual crops and vegetables in Kilimanjaro region during the long rainy season) was applied with farm yard manure (Map 3.49).

3.12.9.4 Use of Compost

Only 5,772 ha (7% of the area of organic fertilizer application) was applied with compost. The largest area applied with compost was found in Same district with 4,354 hectares (75.4% of the total area applied with compost) followed by Moshi Rural (535 ha, 9.3%), Rombo (375 ha, 6.5%), Mwanga (338 ha, 5.9%) and Hai (170 ha, 2.9%) (Chart 3.147 and Map 3.50)



3.12.10 Fish Farming

The number of households involved in fish farming in Kilimanjaro region was 1132, representing 1 percent of the total agricultural households in the region.

3.13. POVERTY INDICATORS

The agricultural census collected data on poverty for the purpose of providing a base for tracking progress in poverty reduction strategies undertaken by the government.

3.13.1 Access to Infrastructure and Other Services

The results indicate that among the evaluated services, regional capital was a service located very far from most of the household's dwellings than any other service. It was located at an average distance of 52.7 kilometers from the agricultural household's dwelling. Other services and their respective average distances in kilometers from the dwellings were feeder road (1.4), primary school (1.5), all weather road (2.1), health clinics (3.8), primary market (6.0), secondary market (22.0), secondary school (4.3), hospital (16.8) and tertiary market (28.6) (Table 3.17).

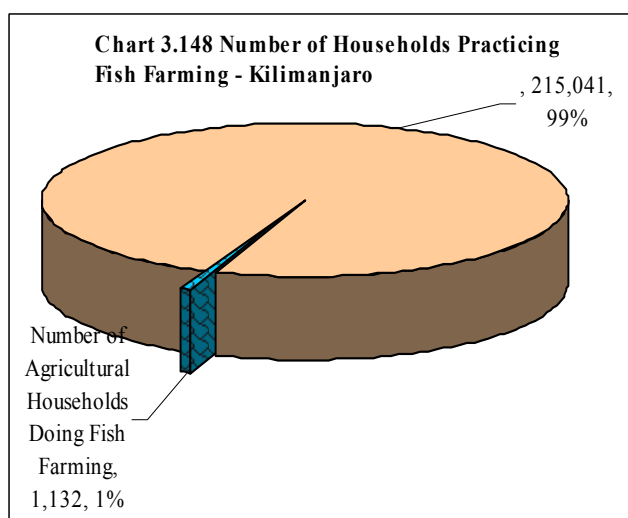
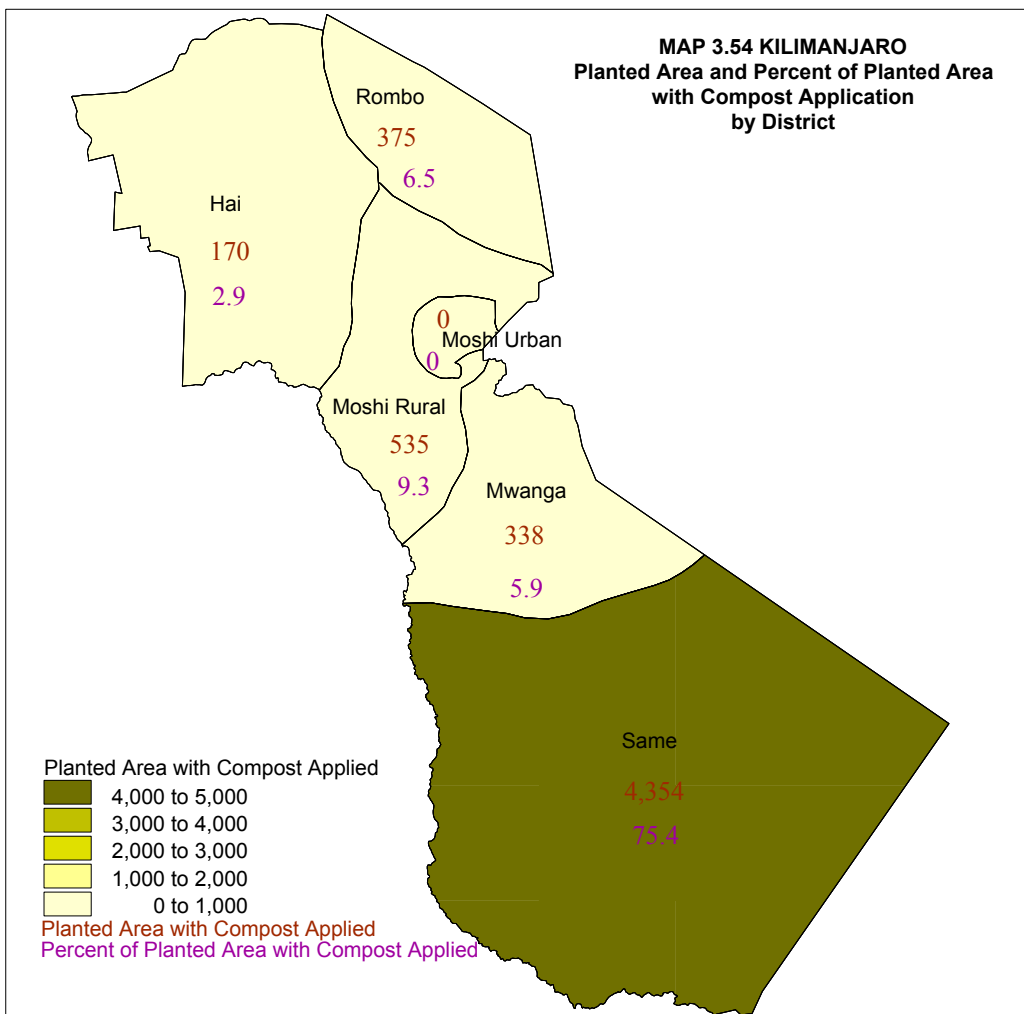
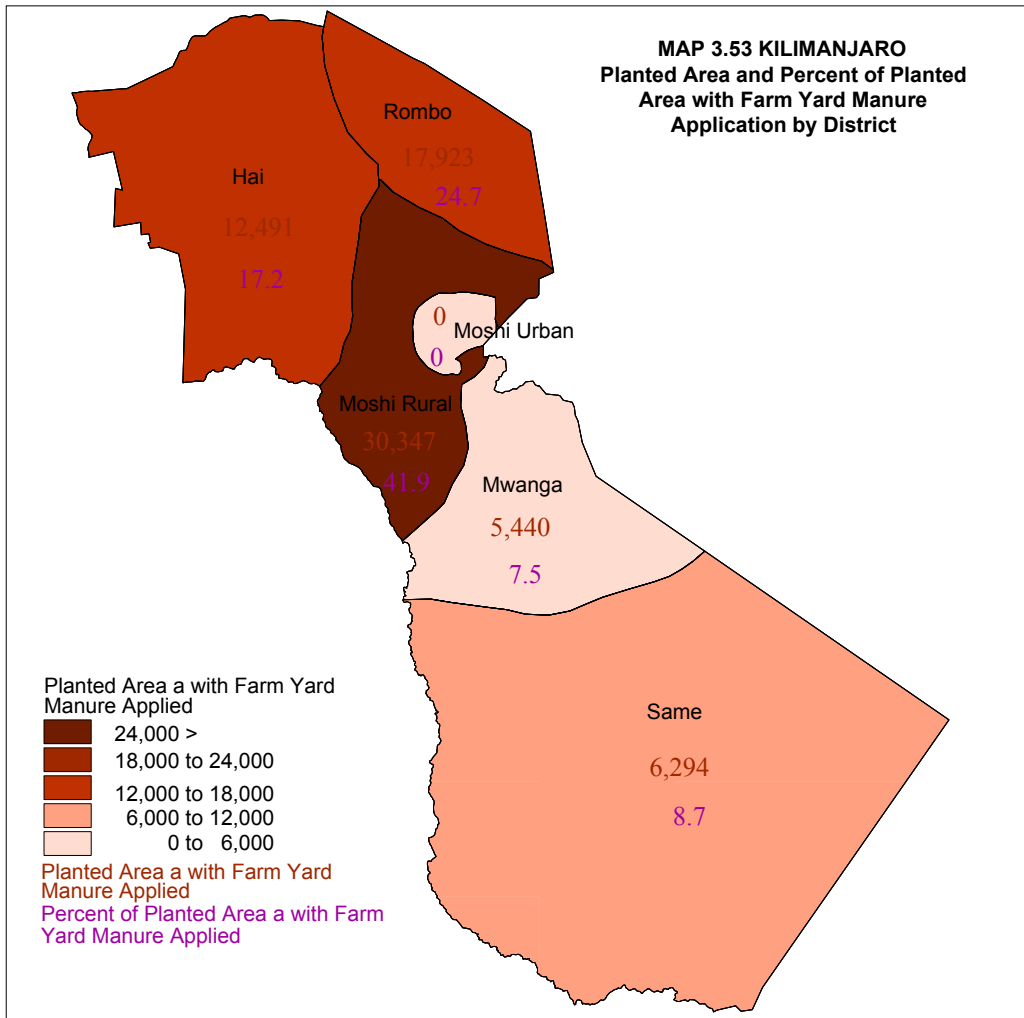


Table 3.17: Mean Distances from Household Dwellings to Infrastructures and Services by District

District	Mean Distance to										
	Secondary Schools	Primary Schools	All weather roads	Feeder Roads	Hospitals	Health Clinics	Regional Capital	Primary Markets	Secondary Market	Tertiary Market	Tarmac Roads
Rombo	4.1	1.2	1.3	0.3	15.8	4.7	69.9	4.9	29.1	54.9	40.1
Mwanga	4.9	1.4	3.6	4.5	18.5	3.6	74.1	7.9	31.1	22.6	25.3
Same	6.9	1.5	6.2	1.3	38.5	4.4	127.8	12.7	31.9	20.5	29.0
Moshi R	3.4	1.7	1.0	1.7	9.9	3.5	23.4	3.9	16.5	19.1	7.3
Hai	4.2	1.7	1.4	1.2	14.8	3.3	29.1	5.5	14.4	25.1	7.2
Total	4.3	1.5	2.1	1.4	16.8	3.8	52.7	6.0	22.0	28.6	18.7



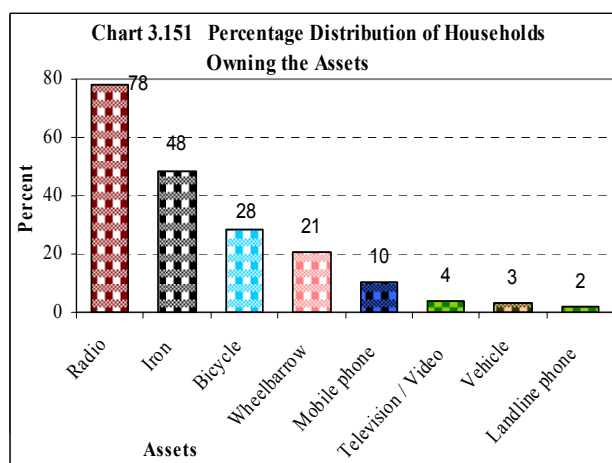
Only 8 percent of the agricultural households reported the available infrastructures and services as ‘very good’ whereas 7 percent reported them to be ‘no good’. Twenty nine percent of the agricultural households said the infrastructure and services were good. Those who said the infrastructures and services were poor were 20 percent while 36 percent said they were average.

3.13.2 Type of Toilet

A large number of rural agricultural households use traditional pit latrines (194,950 households, 90% of all rural agricultural households). This is followed by flush toilets (5,538 households 3%), improved pit latrines (11,310 households, 5%) and other types of toilets (231 household, 0.1%). However, 4,143 households (2%) in the region had no toilet facilities (Chart 3.150).

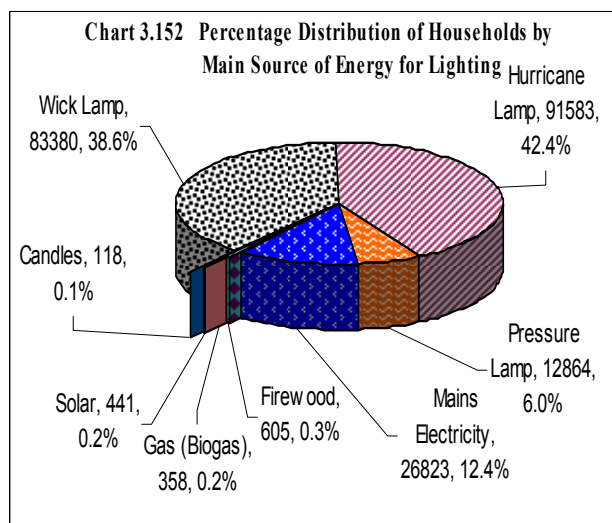
3.13.3 Household’s Assets

Radios were owned by most rural agricultural households in Kilimanjaro region with 168,412 households (78% of the agriculture households in the region) owning the asset followed by iron (104,453 households, 48%), bicycle (61206 households, 28%), wheelbarrows (44,412 households, 21%), mobile phones (21,676 households, 10%), television/videos (9,366 households, 4%), vehicles (7,046 households, 3%), and landline phone (3,697 households, 2%) (Chart 3.151)



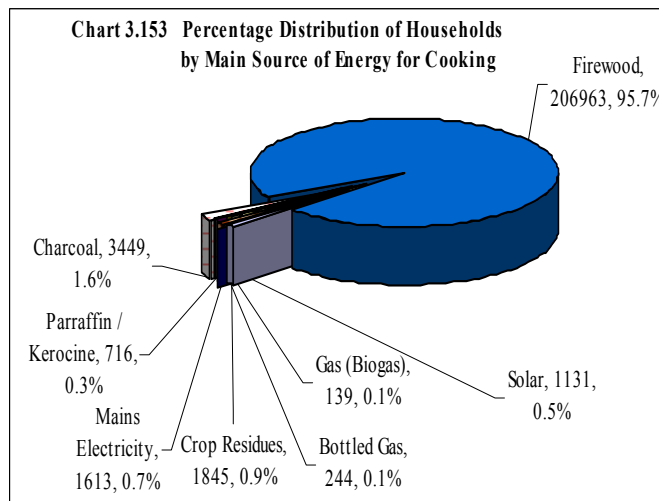
3.13.4 Sources of Lighting Energy

Hurricane lamp is the most common source of lighting energy in the region with 42.4 percent of the total rural households using this source of energy followed by wick lamp (38.6%), mains electricity (12.4%) and pressure lamp (6.0%). The remaining sources of lighting were minor. (Chart 3.152)



3.13.5 Sources of Energy for Cooking

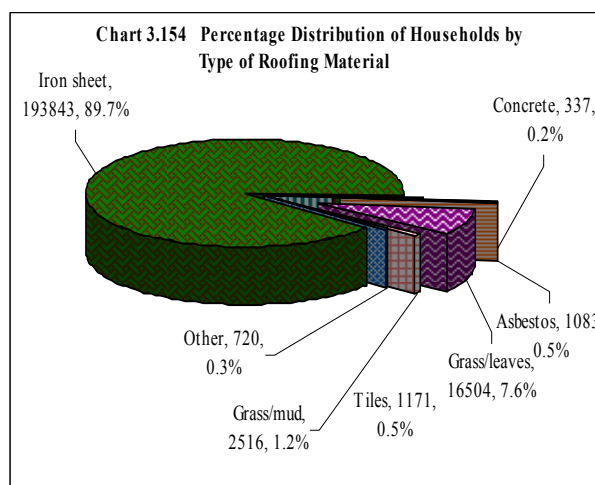
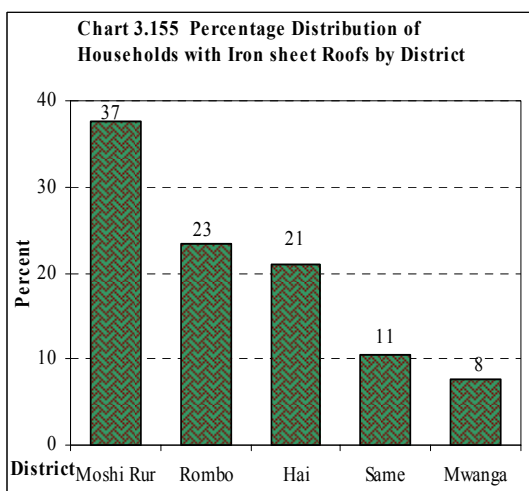
The most prevalent source of energy for cooking was firewood, which was used by 95.7 percent of all rural agricultural households in Kilimanjaro region. This is followed by charcoal (1.6%) and crop residue (0.9%). The rest of energy sources accounted for 1.8 percent. These were mains electricity (0.7%), solar energy (0.5%), paraffin/kerosene (0.3%), bottled gas (0.1%) biogas (0.1%) (Chart 3.153).

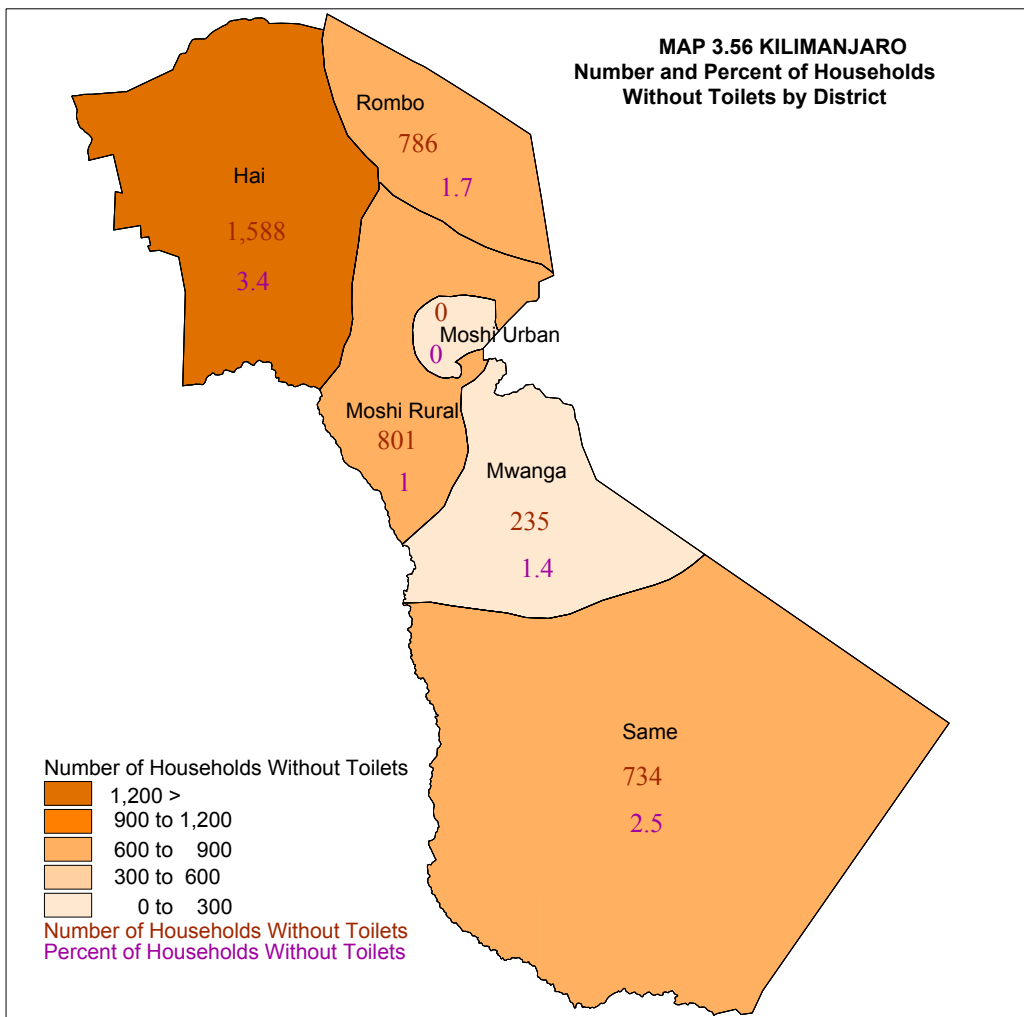
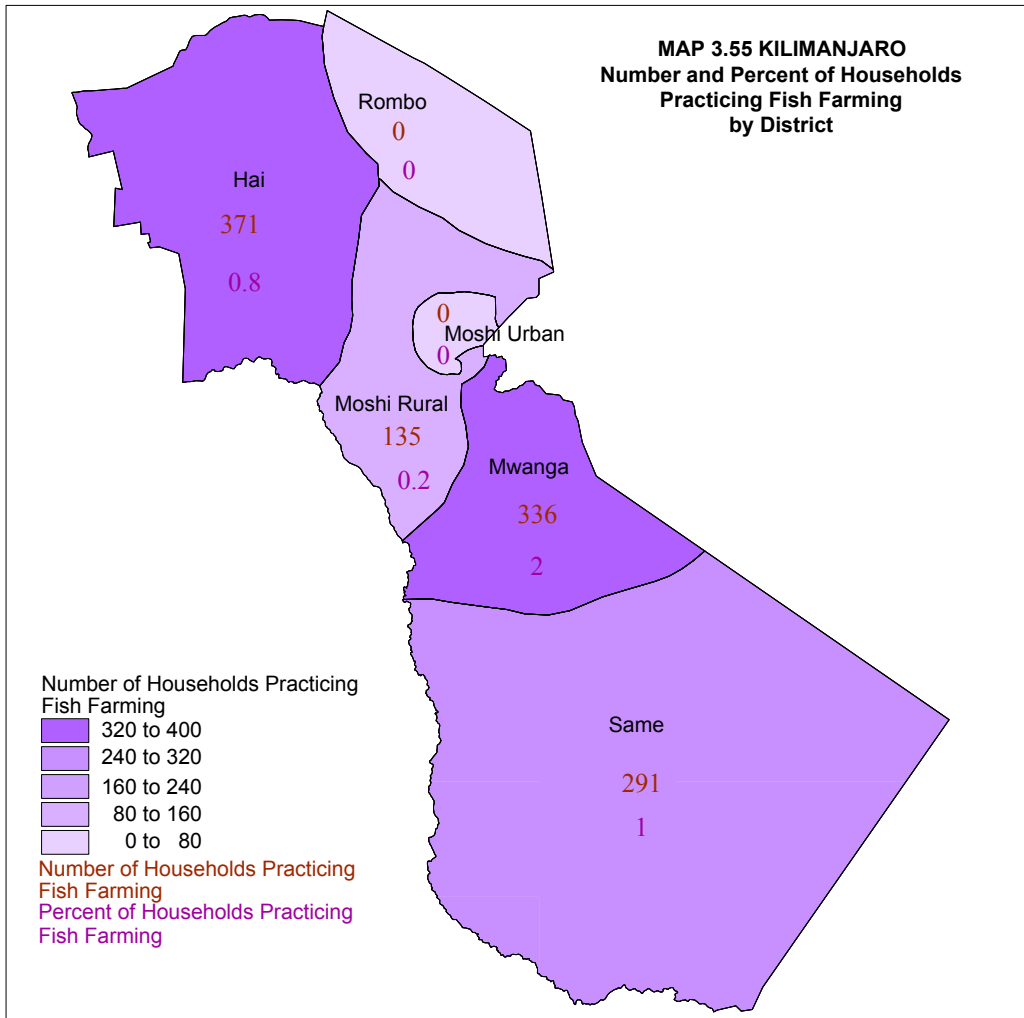


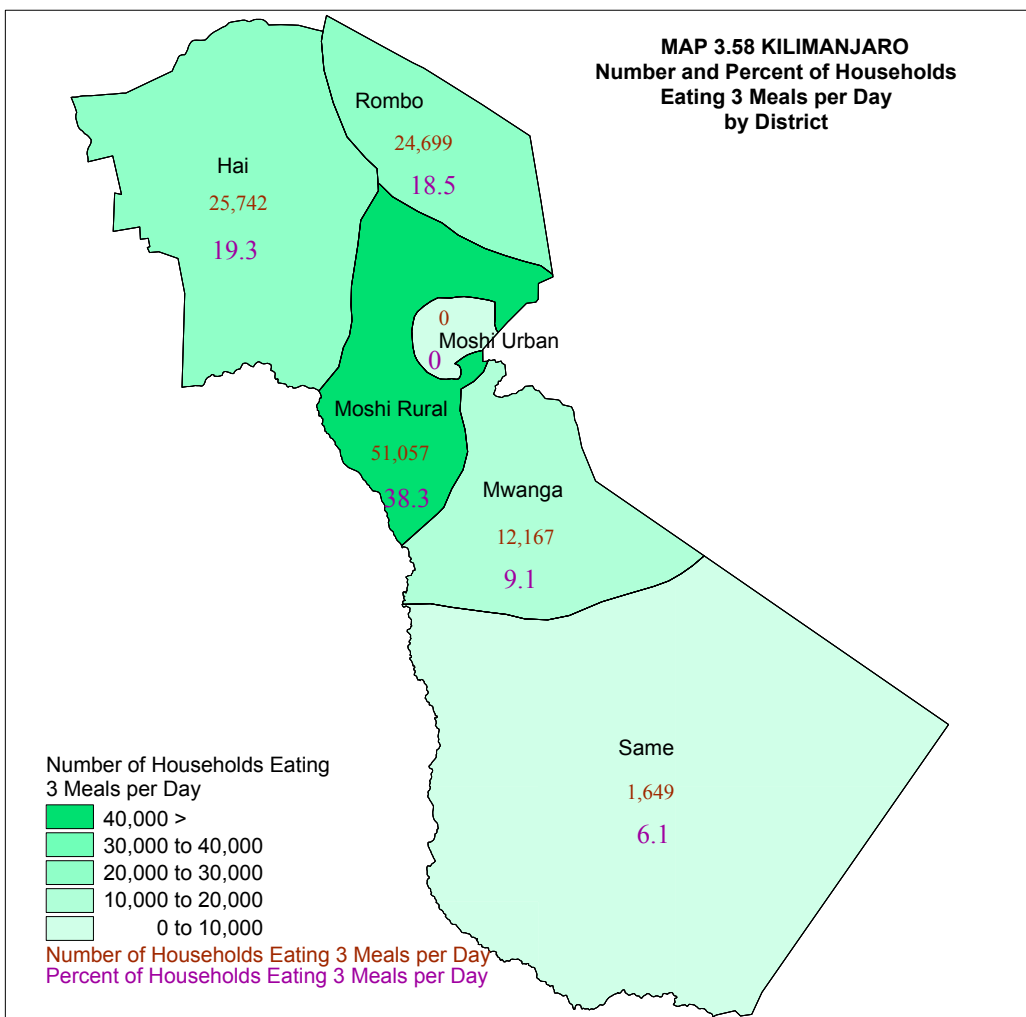
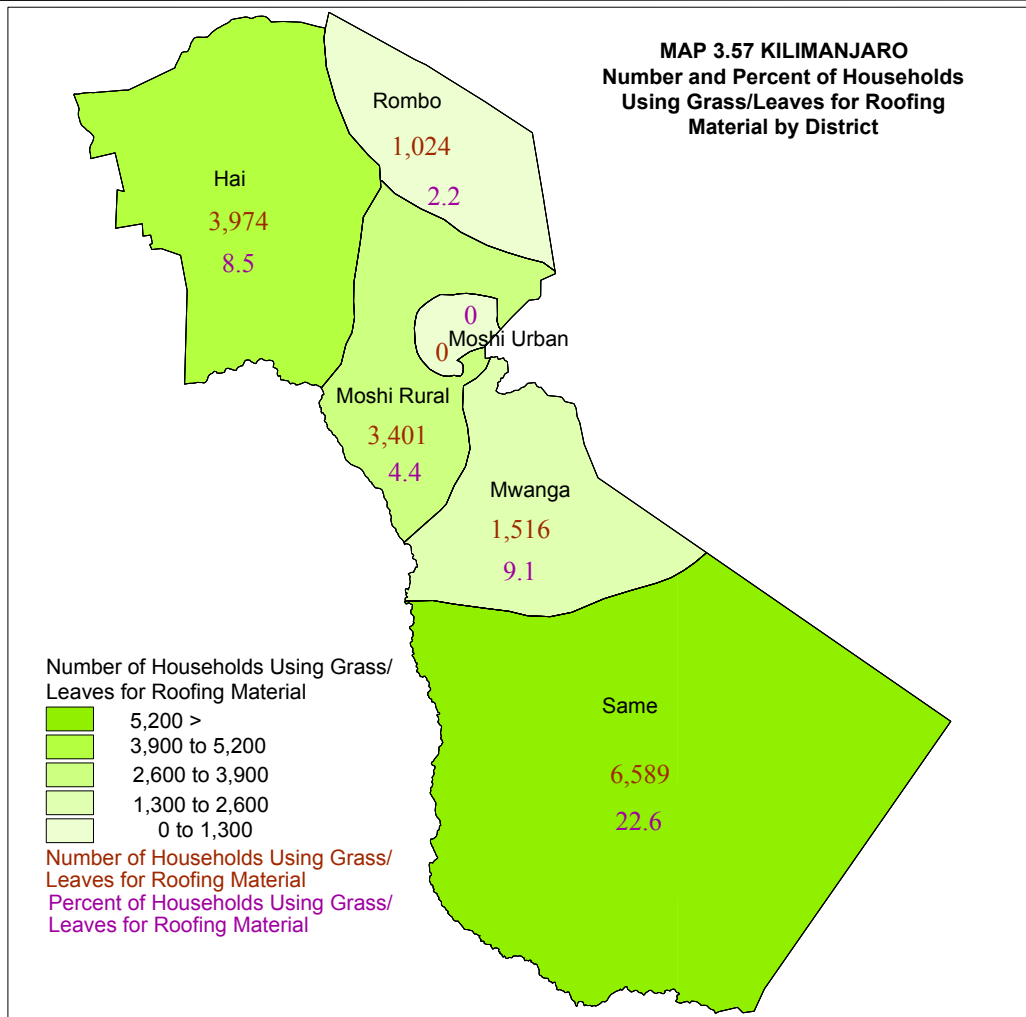
3.13.6 Roofing Materials

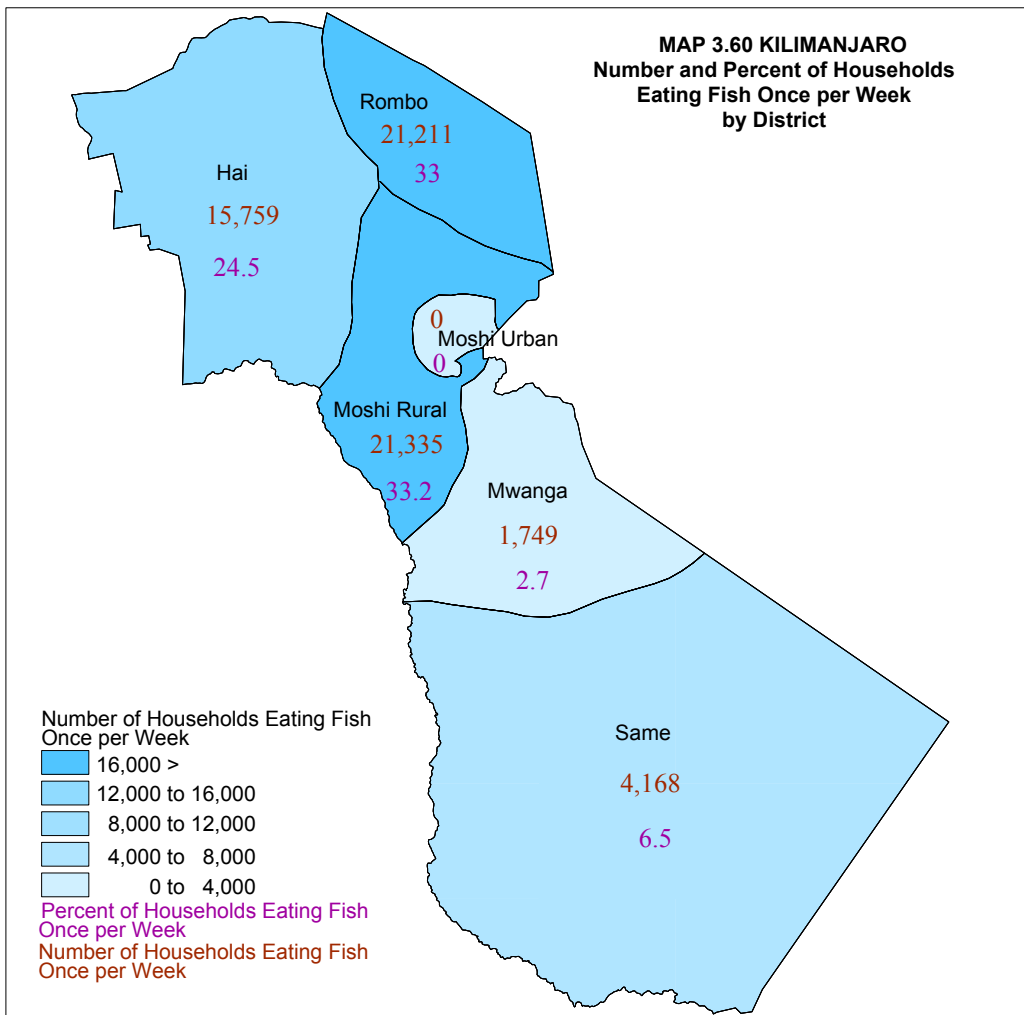
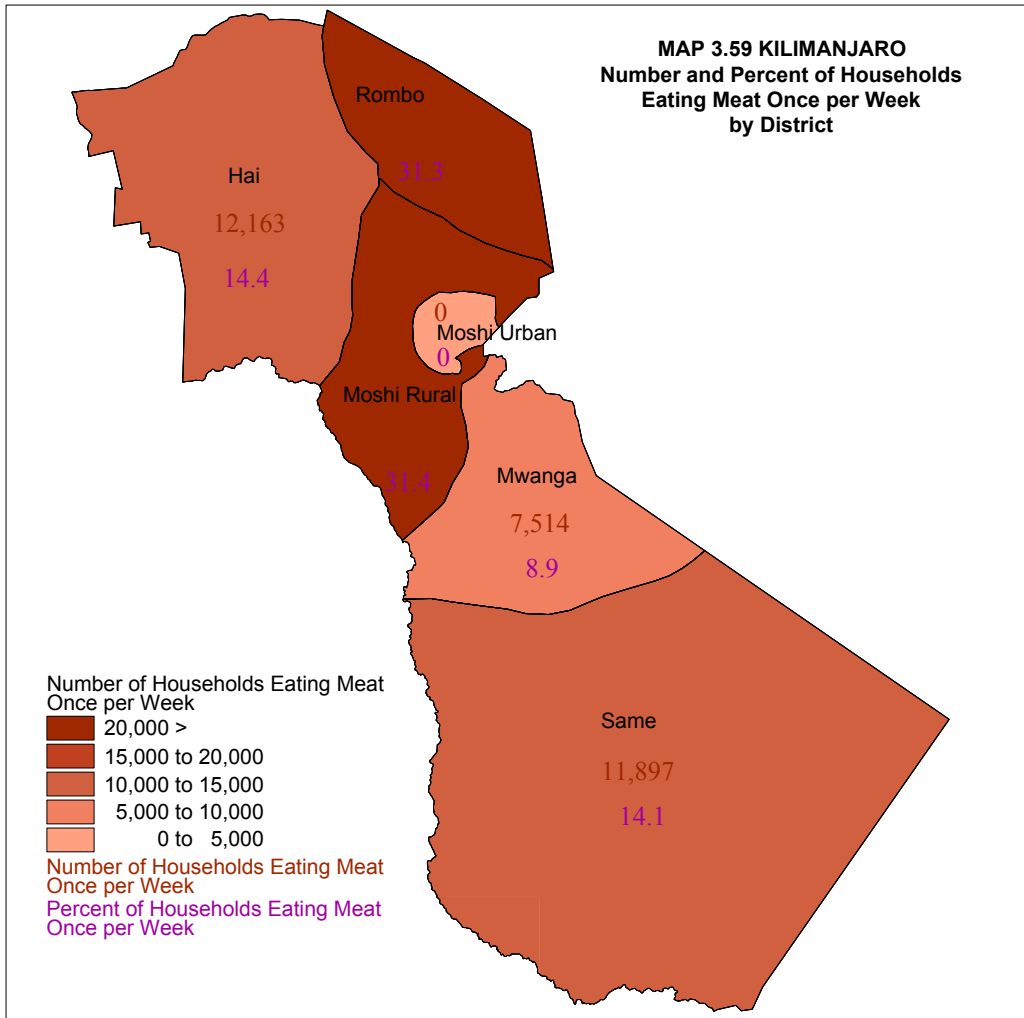
The most common material used for roofing the main dwelling was Iron sheet and it was used by 89.7 percent of the rural agricultural households. This was followed by grass/leaves (7.6%), grass / mud (1.2%), asbestos (0.5%) and tiles (0.5%) (Chart 3.154)

Moshi Rural district had the highest percentage of households with Iron sheet roofing (37%) followed by Rombo district (23%), Hai (21%), Same (11%) and Mwangi (8%) (Chart 3.155 and Map 3.52)



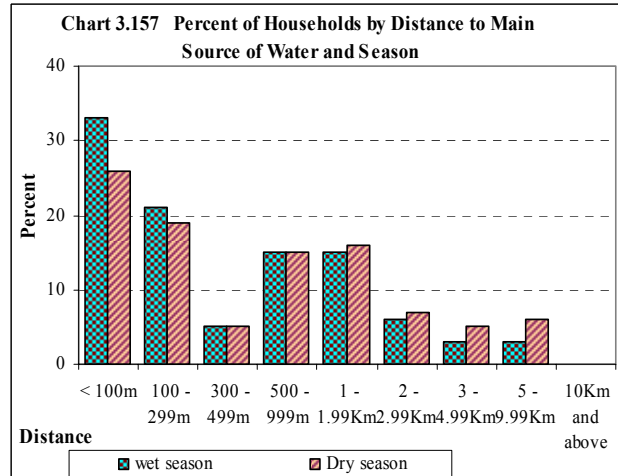
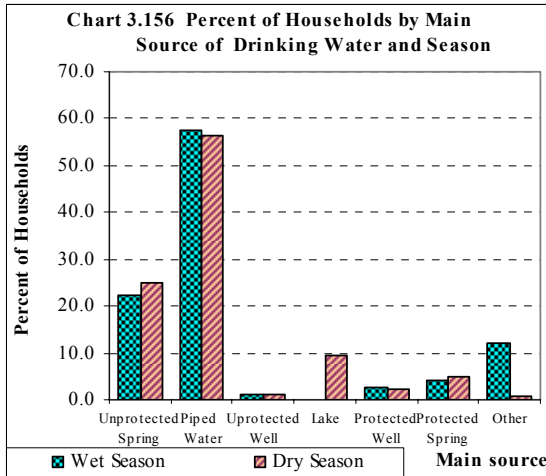






3.13.7 Access to Drinking Water

The main source of drinking water for rural agricultural households in Kilimanjaro region was piped water (57.7% of households in the wet season and 56.4 percent during dry season). This is followed by unprotected spring (22.4% of households in the wet season and 25.2 percent during dry season), protected



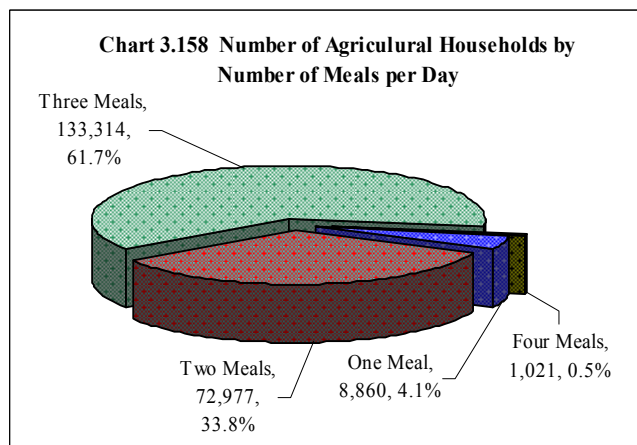
spring (4.2% of households during the wet season and 4.9% in the dry season), protected well (2.6% of households in the wet season and 2.5% during dry season), unprotected well (1.1% of households in both wet season and during dry season), lake /river (none of households fetches water in lake or rivers during wet season while during dry season 9.3% households) and other sources (12.1% of households in the wet season and 0.7% during dry season) (Chart 3.156)

About 74 percent of the rural agricultural households in Kilimanjaro region obtained drinking water within a distance of less than one kilometer during wet season compared to 65 percent of the households during the dry season. However, 26 percent of the agricultural households obtained drinking water from a distance of one or more kilometers during wet compared to 35 percent of households in the dry season. The most common distance from the source of drinking water was less 100 meters (Chart 3.157).

3.13.8 Food Consumption Pattern

3.13.8.1 Number of Meals per Day

The majority of households in Kilimanjaro region normally have 3 meals per day (61.7 percent of the households in the region). This is followed by 2 meals per day (33.8 percent) and 1 meal per day (4.1 percent).



Only 0.5 percent of the households have 4 meals per day (Chart 3.158).

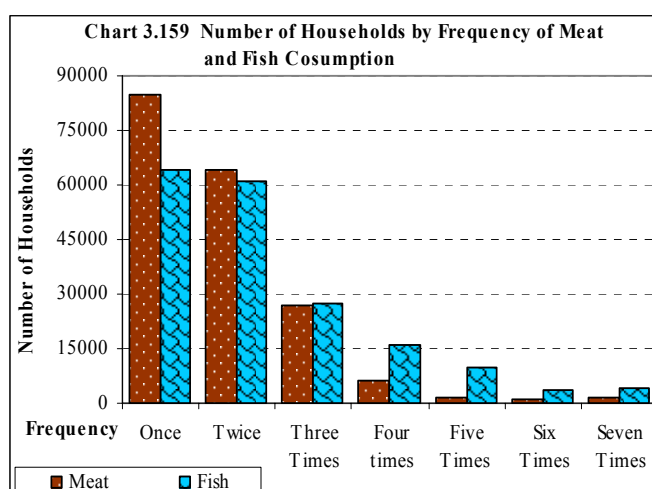
Rombo district had the largest percent of households eating one meal per day whilst Moshi Rural had the highest percent of households eating 3 meals per day. (Table 3.18 and Map 3.53).

Chart 3.18: Number of Households by Number of Meals the Household Normally Takes per Day and District

District	Number of meals per day								
	One	%	Two	%	Three	%	Four	%	Total
Rombo	4556	9.7	17527	37.3	24699	52.5	233	0.5	47014
Mwanga	175	1.0	4363	26.1	12167	72.6	44	0.3	16749
Same	292	1.0	9162	31.5	19649	67.5	0	0.0	29103
Moshi R	1820	2.4	23442	30.5	51057	66.5	507	0.7	76826
Hai	2018	4.3	18483	39.8	25742	55.4	239	0.5	46481
Total	8,860	4.1	72,977	33.8	133,314	61.7	1,021	0.5	216173

3.13.8.2 Meat Consumption Frequency

The number of agricultural households that consumed meat during the week preceding the census was 185,915 (86% of the agricultural households in Kilimanjaro region) with 84,588 households (45 % of those who consumed meat) consuming meat only once during the respective week. This was followed by those who had meat twice during the week (34%) and those who had meat thrice during the week (15%). Very few households had meat four or more times during the respective week. About 14 percent of the agricultural households in Kilimanjaro region did not eat meat during the week preceding the census (Chart 3.159 and Map 3.54).



3.13.8.3 Fish Consumption Frequencies

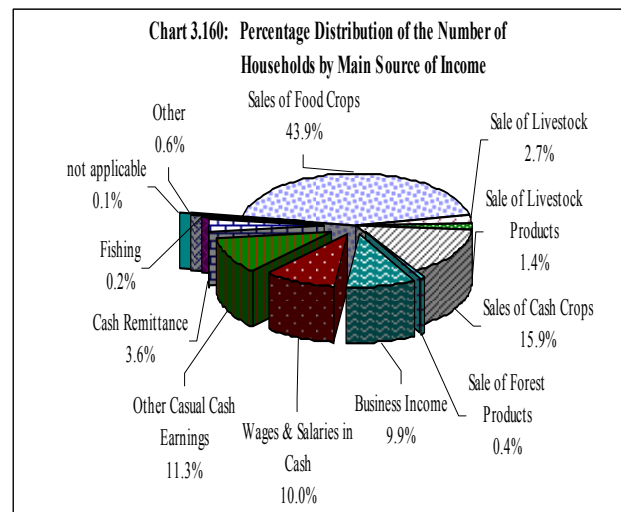
The number of agricultural households that consumed fish during the week preceding the census was 185,590 (85.6% of the total agricultural households in Kilimanjaro region) with 30,583 households (35 % of those who consumed fish) consuming fish once during the respective week. This was followed by those who had fish two times (33%), three times (15%). In general, the percentage of households that consumed fish four or more during the week in Kilimanjaro region was 33,306 (18% of the agricultural households that ate fish in the region during the respective period). About 14 percent of the agricultural households in Kilimanjaro region did not eat fish during the week preceding the census (Chart 3.159 and Map 3.55).

3.13.9 Food Security

In Kilimanjaro region, 64,472 households (30% of the total agricultural households in the region) said they rarely experienced problems in satisfying the household food requirement. However 9,438 (4%) said they sometimes experienced problems, 6 percent often experienced problems and 5 percent always had problems in satisfying the household food requirements. About 55 percent of the agricultural households said they did not experience any food sufficiency problems (Map 3.56).

3.13.10 Main Sources of Cash Income

The main cash income of the households in Kilimanjaro region was from sales of food crops (43.9 percent of smallholder households), followed by sales of cash crops (15.9%), other casual cash earnings (11.3%), wages and salaries in cash (10.0%), business income (9.9%), cash remittance (3.6%), sales of livestock (2.7%), sales of livestock products (1.4%), sales of forestry products (0.4%), fishing (0.2%) and other sources (0.6%) (Chart 3.160).



3.3.5 Kilimanjaro Profile

Kilimanjaro has a land area of 230,000 hectares under crop production and has a relatively high number of crop growing households compared to other regions. Most of the crop growing households have livestock. The number of crop growing household per square kilometer is the second highest in the country. The region has a land area per crop growing household of 1.0 ha and almost all available land is utilized. The region has short and long rainy seasons with the long rainy season being slightly more important. Kilimanjaro has a relatively high percent of permanent crops, some of which are in mono-crop stands and the remainder in mixed annual/permanent crop.

Cereal production in Kilimanjaro is not important and it has one of the smallest planted areas of maize. Paddy, sorghum, cassava and groundnuts are almost absent in the region. There is moderate to low cultivation of beans and vegetables. The region has the second largest planted area of bananas, third for coffee and mangoes. Small amounts of oranges and sugar canes are also grown in the region.

Kilimanjaro has the fourth largest planted area with irrigation in Tanzania and it has the second highest percent of total planted area under irrigation. The region has faced the greatest decline in the number of households with irrigation in 10 years (around 30%). Canals are the most common source of irrigation water and the region has the highest percent of households using canals. Rivers are also used. Practically all irrigation water is obtained by gravity and very few households use buckets/watering cans. Similarly, flood irrigation in the region is the highest in the country and almost all field application of irrigation water is by flood, with very few households applying irrigation water by buckets/watering cans. Most cultivation is done by hand with very few households using oxen. However, it is one of the six regions in the country that has some cultivation by tractor. Kilimanjaro has one of the highest percent of the total planted area with fertilizer application and slightly more farm yard manure than inorganic fertilizer is applied. It has the second highest percentage of total planted area with insecticide application and the fourth highest for fungicides. The region has the highest percent of households using air tight drums for storage and it is the most common method in the region, however this is closely followed by sacks/open drums. Very little storage is done in locally made traditional structures.

Although Kilimanjaro has only a moderate number of households selling crops, it has the highest percent of households processing crops. Though small, the region has the second largest number households processing crops on farm by machine, however most processing in the region is done by neighbours machine. It has the second highest number of households selling processed crop and this is mostly to farmers associations (higher than any other region) and the marketing cooperatives (also the highest in the country). Kilimanjaro has one of the highest number and percent of smallholder households receiving extension advice in the country.

Kilimanjaro region has a moderate number of planted trees by smallholders in the country with gravellis being the dominant species. Some eucalyptus and casurina are also grown. It has the largest number of households with erosion control/water harvesting bunds in Tanzania with terraces and erosion control bunds being the most common.

4.1. Rombo

Rombo district has the second largest number of households in the region as well as third highest percent of households involved in smallholder agriculture in the region. Most smallholders are involved in crop farming only, followed by crop and livestock. It has no livestock only households and no pastoralists were found in the district.

The most important livelihood activity for smallholder households in Rombo district is Permanent Crop Farming, followed by Annual Crop Farming, Livestock keeping/rearing, Off farm Income, Tree or Forest Resources, Remittances, and Fishing/hunting & gathering. However, the district has one of the highest percent of households with off-farm activities and second highest percent of households with more than one member with off-farm income. Compared to other districts in the region, Rombo has the lowest percent of female headed households (9%) but also it has one of the lowest average ages of the household head. With an average household size of 5 members per household it is relative lower than the average for the region which is 6 member households. Rombo has a comparatively low literacy rate among smallholder households and this is reflected by the concomitant relatively low level of school attendance in the region. The literacy rates for the heads of household is also slightly higher than most of districts in the region.

It has one of the largest utilized land area per household (0.5 ha) and the allocated area was almost utilized indicating a high level of land pressure. The total planted area is one of the greatest than in other districts in the region due to the presence of good wet season, however it has the lowest planted area per household (0.5 ha) attributed to the high number of smallholders in the district.

The district is not important for maize production in the region with a planted area of over 17,000ha; however the planted area per household is the lowest in the region. Paddy production was not reported in the district. Rombo district did not show the production of bulrush millet. Cassava production is moderate accounting for 0.5 percent of the area planted in the region. The district did report the production of Irish potatoes. The production of beans in Rombo was higher in the region with a planted area of (13,664 ha). Oilseed crops are very important in Rombo as it ranks first in the region. Vegetable production is not important in the district. Cabbage was reported with lowest production, while, tomatoes, chillies were not recorded in the district. No annual traditional cash crop which was grown in the district.

Compared to other districts in the region, Rombo has the second largest planted area with permanent crops, which is dominated by banana (15,128 ha). Other permanent crops includes coffee (10,165 ha) and oranges (158 ha). Guava was grown in very small area (1.0 ha).

As with other districts in the region, most land clearing and preparation is done by hand, however very slightly more land preparation is done by oxen compared to most other districts.

The use of inputs in the region is moderate, however district differences exist. Rombo ranked fourth in planted area with improved seed in Kilimanjaro region. The district has moderately low planted area with fertilizers (Farm yard manure, compost and inorganic fertiliser), however most of this is farm yard manure. Compared to other districts in the region, Rombo district has a highest level of insecticide use but low use of fungicides. Also, Rombo district had one of the lowest percentages of households that used herbicide in the region. It has the fifth lowest area with irrigation compared to other districts with 81 ha of irrigated land. The most common source of water for irrigation is from canals using gravity. Canal, well and dam are the most common means of irrigation water application and a very small amount of borehole irrigation is used.

The most common method of crop storage is in sacks and open drum, however the proportion of households storing crops in the district is moderately low than other districts in the region. The district has the relatively high number of households selling crops, however for those who did not sell, the main reason for not selling is insufficient production. Rombo is among the highest percent of households processing crops in Kilimanjaro region and is almost all done by hand. Rombo is among the two districts with a higher percent of households selling processed crops to neighbours than other districts and also some sales were made to secondary markets and on traders at farm. Although very small, access to credit in the district is to men only and the main sources are from friends and Friends and Relative.

A comparatively larger number of households receive extension services in Rombo and all of this is from the government. The quality of extension services was rated between good and average by the majority of the households.

Tree farming is important although small in Rombo as only 6,590 planted trees) and is mostly *Gravellia* spp, *Cyprus* spp with some and *Azadirachta* spp. The third lowest proportion of households with erosion control and water harvesting structures is found in Rombo district and is mostly erosion control bunds; however it also has the highest number of terraces, gabions/sandbags and drainage ditches than other districts.

The district has the lowest number of cattle in the region and they are almost all improved. Goat production is moderate compared to other districts; however it has the third largest population of sheep in the region. It has the second big number of pigs in the region and a moderate number of chickens. The district is one of the three that did not show the rearing of layers in the region. It has the highest numbers of ducks and donkeys the region is ranked third in the region. Rabbits are also found in the district but there was no turkeys keeping in the district. The smallest number of households reporting Tsetse and tick

problems was in Rombo district and it had the second smallest number of households de-worming livestock. The use of draft animals in the district is lowest; there were few households who practiced fish farming in the district.

It has the moderate access to secondary schools, health clinics, primary and secondary markets but amongst the worst to primary schools compared to other districts. Also, it has the moderate accesses to all weather roads and moderate to regional capital.

Rombo district has the relative low percent of households with no toilet facilities and it has one of the lowest percent of households owning vehicles, bicycles and tv/video, but comparative high percent owning mobile phones. It has one of the lowest numbers of households using mains electricity in the region. The most common source of energy for lighting is the hurricane lamp and practically all households use firewood for cooking. The district has the fourth lowest percent of households with grass roofs with 37 percent of households having iron sheets. The most common source of drinking water is from piped water. It has the comparative high percent of households having two meals and highest percent per households having one meal per day when compared to other districts and relative low percent with 3 meals per day. The district had the third highest percent of households that did not eat meat; however, it has one of the lowest percent of households that did not eat fish during the week prior to enumeration; however most households had problems with food satisfaction.

4.2.2 Mwanga

Mwanga district has the fifth smallest number of households in the region and it has the lowest percentage of households involved in smallholder agriculture in the region. Most smallholders are involved in crop farming only, followed crop and livestock. It is the fourth with highest number of livestock only households and also pastoralists were found in the district.

The most important livelihood activity for smallholder households Mwanga district is Annual Crop Farming, followed by off farm Income. The district has the lowest percent of households with no off-farm activities and also it has the fourth percent of households with more than one member with off-farm income. Compared to other districts in the region, Mwanga has a highest percent of female headed households (31%) and it has one of the moderately low average ages of the household head in the region. With an average household size of 4.2 members per household it is relatively high for the region.

It has a moderate utilized land area per household (0.6 ha) and 99 percent of the allocated area is currently being utilized. The district has the smallest planted area in the region, and the fourth largest planted area per household (0.6 ha).

The district is moderately important for maize production in the region with a planted area of 10,702 ha, and the planted area per household is also moderate for the region. The district has the one of the lowest planted area of paddy in the region with 71 hectares. Sorghum is grown in the district. Cassava

production is moderate to low, accounting for 3 percent of the quantity harvested in the region. The district did not report the planted area of Irish potatoes. The production of beans in Mwanza was the smallest than in other districts in the region with a planted area of (4,452 ha). Mwanza district has the fourth smallest groundnuts planted area in Kilimanjaro region with area planted per groundnut growing household of 0.30 ha. Vegetable production is moderately important in the district. It has the fifth smallest planted area with cabbage (2 ha) but, production of tomatoes was not recorded in the district. A traditional cash crop (e.g. pyrethrum) is not grown in the district.

Compared to other districts in the region, Mwanza has the fifth largest planted area with permanent crops which is dominated by coffee (4,547 ha), Banana (3,588 ha), and guava (3 ha). Other permanent crops are either not grown or are grown in very small quantities.

As with other districts in the region, most land clearing and preparation is done by hand, however a very small amount of land preparation is done by tractor

The use of inputs in the region is moderately low, and district differences exist. Mwanza has the fifth smallest planted area with improved seed in the region as well as the moderate high (third) proportion of households using improved seeds. The district has the fourth highest planted area with fertilizers (Farm yard manure, compost and inorganic fertilizer), however most of this is farm yard manure. Compared to other districts in the region, Mwanza district has one of the lowest levels of insecticide use. The use of fungicides, although small, was moderate to high compared to other districts. Application of herbicides was among the lowest. It has the fourth largest area with irrigation compared to other districts with 3,014 ha of irrigated land. The most common source of water for irrigation is from rivers using gravity. Flood and bucket are the most common means of irrigation water application and a very small amount of sprinkler irrigation is used.

The most common method of crop storage in Mwanza district is in Sacks/Open Drums, however the proportion of households storing crops in the district is relatively high. Mwanza district is one of the districts with a moderate number of households selling crops, however for those who did not sell, the main reason for not selling is insufficient production. Mwanza is among the districts with the lowest percent of households processing crops in Kilimanjaro region and is almost all done by neighbours machine. The district also has the fifth highest percent of households selling processed crops to marketing cooperatives than other districts and no sales are to farmers associations or large scale farms. Although very small, access to credit in the district is to female headed households only and the main source is “saving and credit societies”. A comparatively small number of households receive extension services in Mwanza district and all of this is from the government. The quality of extension services was rated between very good and good by the majority of the households.

Tree farming is important in Mwanza district with (24,430 planted trees) and is mostly Gravelis and Senna. The moderate proportion of households with erosion control and water harvesting structures is found in Mwanza district and is mostly erosion control bunds and water harvesting bunds; however it also has vetiver grass, number of tree belts and drainage ditches.

The district has the fourth largest number of cattle in the region and they are almost all indigenous. Goat production is comparative lower compared to other districts; and also it has the fifth largest population of sheep in the region. It has the fourth largest number of both pigs and chicken in the region. Some ducks, rabbits and turkey are also found in the district. A number of households reported tsetse and tick problems in Mwanza district and it had the fifth largest number of households de-worming livestock. The district has the fifth largest number of households using draft animals in the region. A comparative number of households practice fish farming; however the district has the second largest number in the region.

It has amongst the best access to secondary schools, primary schools, health clinics but worst regional capital. However, it has the moderate access to primary and secondary markets compared to other districts.

The percentages of households without toilet facility in Mbeya Rural district is 1 percent and it is among the districts with the lowest percent of households owning wheel barrows, vehicles, bicycles, tv/video and mobile phones. It has the moderate number of households using mains electricity in the region. The most common source of energy for lighting is the hurricane lamp and practically the majority of the households use firewood for cooking. The roofing materials for most of the households in the district is iron sheets (8%) and grass/leaves (9%) and the most common source of drinking water is from piped water. It is one of the districts with the highest percent of households having three meals per day. The district had the second lowest percent of households that did not eat both meat and fish during the week prior to enumeration; however most households seldom had problems with food satisfaction.

4.2.3 Same

Same district has the fourth largest number of households in the region and it has one of the highest percent of households involved in smallholder agriculture in the region. Most smallholders are involved in crop farming only, followed by crop and livestock. It has a one of the biggest number of livestock only households and no pastoralists were found in the district.

The most important livelihood activity for smallholder households in Same district is Annual Crop Farming, followed by Permanent Crop Farming. However, the district has the highest percent of households with no off-farm income activities and the fifth lowest percent of households with more than one member with off-farm income. Compared to other districts in the region, Same has a relatively high percent of female headed households (17%) and it has the relatively high average age of the household head in the region. With an average household size of 3.9 members per household it is relatively below average for the region. Same has a fourth highest literacy rate among smallholder households regardless the moderate level of school attendance in the region.

The land area utilized per household (0.9) is slightly above the average for the region and 93 percent of the allocated area is currently being utilized which is moderate to high for the region. The district has the moderate to high planted area in the region, and the largest planted area per household (1.1 ha in the wet season and 0.7 ha in short rainy season).

The district is comparative important for maize production in the region with a planted area of 20,451 ha and the planted area per household is (0.4 ha) which is equal to the average for the region (0.4 ha). Paddy production is very important with a planted area of 1,169 hectares; however it is the second highest in the region. The district is comparative low for the production of sorghum whereas; As Irish potatoes was produced in the district but, wheat was not grown in the district. The district has the highest planted area of cassava accounting for 57 percent of the cassava planted area in the region. The production of beans in Same is relatively high than in other districts in the region with a planted area of (10,829 ha). Oilseed crops are less important in Same as no production which was reported. Although very small the district is third largest in vegetable production in the region. Tobacco was not are grown in the district.

Permanent crops though small but it is important in Same district with only (11% of the total permanent crop planted area in Kilimanjaro region). The most prominent permanent crops in the district include coffee (3,500 ha), banana (3,339 ha) and guavas (173ha). Other permanent crops are either not grown or are grown in very small quantities.

As with other districts in the region, most land clearing is done by hand slashing, however it has the comparative largest area cleared by burning and a relatively small area of bare ground before planting. Practically all Land preparation is done by hand, however a very small amount of land preparation is done by oxen and tractor.

The use of inputs in the region is comparative low, however district differences exist. Same has the comparative small planted area with improved seed in Kilimanjaro region and this is due to high prices and sometimes there are not readily available in time. The district also has one of the smallest planted area with fertilizers (Farm yard manure, compost and inorganic fertilizer), and practically all is with Inorganic fertilizer. Compared to other districts in the region, Same district has the smallest area of insecticide where's it has the biggest area of fungicide use and the use of herbicides is high. It has the highest area with irrigation in the region with (11,255ha) of irrigated land. The most common source of water for irrigation is from rivers and canals and almost all water application is by using floods and hand bucket/watering canes.

The most common method of crop storage in Same is Sacks/Open drums, and the proportion of households not storing crops in the district is moderate to high for the region. The district has the third lowest percent of households selling crops, however for those who did not sell, the main reason for not selling is insufficient production. Same district has a comparative low percent of households processing crops in the

region and is almost all done by neighbour machine; however, the district does not process crops by trader. Small quantities of processed crops are sold and very few households have access to credit.

A moderate number of households receive extension services in Same district and almost all of this is from the government. The quality of extension services was rated between very good and good by the majority of the households.

Tree farming though small but is important in Same district (with 3,857 planted trees) and is mostly Greville Spp and Senna Spp.. The third highest proportion of households with water harvesting bunds is found in Same district and it is among the five districts which controls erosion by using drainage ditches

The district has a moderate number of cattle in the region and they are almost all indigenous. Goat and sheep production is lowest compared to other districts. It has the fourth largest number of pigs in the region and the comparative low number of chickens, all of which are indigenous. Virtually there was no improved chicken which was found in the district. The district has the fifth lowest number of ducks, but no turkeys and a small number of rabbits but biggest number of donkeys found in the district. Although a small number of households reported tsetse problem but, relative high number of households reported tick problems in Same district. A comparative low amount of de-worming of livestock is practiced in the district draft animals are also used. Fish farming was practiced by households in the district, so it is one of the four districts where fish farming was carried out in the region.

It has amongst the best access to secondary schools and feeder roads but also relative access to primary schools, health clinics, and primary markets compared to other districts. However, it has one of the best accesses to tertiary markets and the regional capital.

The percentage of households without toilet facility in Same district is above the average of the region; however it has the fourth highest percent of households with toilet facilities. It has the relative low percent of households owning land line phones and vehicles but the lowest percent owing Tv/video. It has also the lowest number of households using mains electricity in the region and the most common source of energy for lighting is the wick lamp and practically all households use firewood for cooking. Although, the district has a highest percent of households with grass roofs (40%) but it has 11 percent of households having iron sheet roofing. The most common source of drinking water is from unprotected wells. Thirty three percent of the households in the district reported having one or two meals per day and virtually there were some households that reported having more than three meals per day. The district had a lowest percent of households that did not eat meat or fish during the week prior to enumeration and most households seldom had problems with food satisfaction.

4.2.4 Moshi rural

Moshi rural district has an average number of households slightly above that of the region and it has the highest percent of households involved in smallholder agriculture in the region. Most smallholders are

involved in crop farming only, followed by crop and livestock. It has a relative big number of livestock only households and no pastoralists were found in the district.

The most important livelihood activity for smallholder households in Moshi rural district is annual crop farming followed by Permanent Crop Farming. It has the lowest percent of households with no off-farm activities and the highest percent of households with more than one member with off-farm income. Compared to other districts in the region, Moshi rural district has the highest percent of female headed households (59%) and it has one of the highest average age of the household head. With an average household size of 3.9 members per household it is slightly below average for the region. Moshi rural district has a comparatively high literacy rate among smallholder households and this is reflected by the concomitant relatively high level of school attendance in the region.

It has the second smallest utilized land area per household (0.8 ha) and 97 percent of the allocated land area was utilized. The total planted area was moderate to high in the region however it has one of the third largest planted area per household (0.5 ha in the wet season and one of the largest 1.1 ha in the dry season. Moshi rural like any other district is important for maize production in the region with a planted area of (26,275 ha,) and the planted area per household is among the lowest in the region. Paddy production is also important with a planted area of 1,486 hectares and the production of sorghum was very small in the district.

Cassava, bean and Irish potato production is relative big in the district, and also wheat was not grown. Irish potatoes were grown in the district and were the fourth highest in the region with 17 hectares. Beans was important in the district and was third in the region with the planted area of (6,524 ha). Oilseed crops and vegetables though small but still there are important in the district however, whilst the district has one of the smallest planted area with tomatoes it is the second in terms of tomato planted area per household. As traditional cash crop (e.g. tobacco) is not grown in the district, also, cotton was not planted in the district.

Compared to other districts in the region, Moshi rural district has the largest planted area with permanent crops (40.9% of total permanent crop planted area) which is dominated by banana (25,513 ha), coffee (12,016 ha), oranges (804 ha), and guavas (545 ha). A small area of avocado, plums and are grown. Apart from a minor amount of sugarcane no other permanent crop is grown.

As with other districts in the region, most land clearing and preparation is done by hand, however the second smallest land preparation done by oxen is found in the district.

As with other districts in the region, land clearing by hand slashing is predominant and practically all land preparation is by hand.

The use of inputs in the region is relative small, however district differences exist. Moshi rural district has the second largest planted area with improved seed; however it has also the fourth highest planted area per household in the region. The district also has the second largest percent of planted area with fertilizers (Farm yard manure, compost and inorganic fertilizer), and most of this is with inorganic fertilizer. Compared to other districts in the region, Moshi rural district has relative low area planted with insecticide but has the third highest percent of the total planted area in the region. The percent of planted area with fungicides is amongst the highest in the region and also is one the highest for herbicides. It has the second highest areas of irrigation with (7,029 ha.) The most common source of water for irrigation is from canals using gravity and hand buckets/ Bucket. Floods and Watering cans are the most common means of irrigation water application.

The most common method of crop storage is in sacks and /or open drums; however the proportion of households not storing crops in Moshi rural district is amongst the lowest in the region. The number of households selling crops in the district is one of the biggest in the region, however for those who did not sell, the main reason for not selling is insufficient production. The relative big percent of households processing crops in the region is found in Moshi rural district and processing is mostly done by neighbours machine. The district has the largest number of households processing crops on farm by machine. It also has the largest number of households processing crops on farm by hand. Most households that sell crops sell to local markets or trade stores, traders on farm and neighbours no sales are to large scale farms. Access to credit in the district is very small.

A relative small number of households receive extension services in Moshi rural district and almost all of this is from the government. The quality of extension services was rated between very good and good by the majority of the households.

Tree farming is equally important in Same district (with 6,989 planted trees) and most of them are Greville spp, Senna spp, Albizia spp and some Eucalyptus Spp spp, The largest proportion of households in Moshi rural district use erosion control bunds for erosion control.

Moshi rural district has the second largest number of cattle in the region and most of them are indigenous. It is among the districts with the large number of goats in the region, however the district has the relative high density (97 head per km²) Moshi rural is also the districts with the biggest number of pigs and chicken, relative low number of sheep, however it has the second largest number of improved chickens (both layers and broilers) in the region. Small numbers of rabbits, but comparative high number of ducks and turkeys in the region. A moderate to high number of households reported Tsetse and tick problems in Moshi rural district and it had one of the biggest numbers of households de-worming livestock. The use of draft animals in the district is moderate and fewer number of households practice fish farming in the region.

It is amongst the districts with the moderate access to feeder roads, primary markets and secondary markets compared to other districts.

Moshi rural district has one of the lowest numbers of households with no toilet facilities. The district has one of the highest percent of households owning television/video, vehicles, radio, mobile phones, land line, irons, bicycles wheel barrows, it has the second highest percent of households with bicycles and relatively low number of irons. It has the largest number of households using mains electricity in the region. The most common source of energy for lighting is the wick lamp and practically all households use firewood for cooking. The district has the second smallest percent of households with grass roofs with 94.6 percent of households having iron sheets. The most common source of drinking water is piped water, and it has the lowest percent of households having two or one meal per day compared to other districts and the highest percent with 3 meals per day. The district had one of the lowest percent of households that did not eat meat during the week prior to enumeration but has the relative low percent of households that did not eat fish. Most households seldom had problems with food satisfaction.

4.2.5 Hai

Hai district has the third highest number of households in the region and it has the third highest percent of households involved in smallholder agriculture in the region. Most smallholders are involved in crop farming only, followed by crop and livestock farming. It has a relative large number of livestock only households and no pastoralists were found in the district.

The most important livelihood activity for smallholder households in Hai district is Annual Crop Farming followed by Permanent Crop Farming, Livestock Keeping/Herding, Tree/Forest Resources, Off-Farm Income, Remittances, and Fishing/Hunting and Gathering. The district has the third highest percent of households with no off-farm activities and also the third highest percent of households with more than one member with off-farm income. Compared to other districts in the region, Hai has a moderate percent of female headed households (54%) and it has one of the moderate average age of the household head. With an average household size of 3.6 members per household it is slightly lower than the regional average. Hai has the fourth highest literacy rate among smallholder households in the region and this is reflected by the concomitant relatively high level of school attendance. The rate of "Never Attended" is among the highest in the region.

It has one of the moderate utilized land area per household (1.1 ha) which is slightly above to the regional average of 0.6 ha per household. The district has the second smallest planted area in the region, however it has the third largest planted area per household (0.5 ha) in the wet season.

The district is equally important for maize production with a planted area of (21,360 ha), however the planted area per household is moderate compared to other districts in the region. Paddy production is

relatively important with a planted area of only 303 hectares and the production of sorghum is moderate high in the region. Wheat and finger millet are also grown in the district. Both Irish and Sweet potatoes are being grown; cassava was also planted in the district with 81 hectares and is fourth in the region. The district has the highest percent of area planted with irish potatoes with 2,391 hectares. The production of beans in Hai district is the third largest in the region with a planted area of 8,815 hectares, oil crops such as groundnuts and simsim are important in the district. Vegetable production is also very important in the district; however the district has the largest planted area per tomato growing household. Traditional cash crops (e.g. tobacco and cotton) are not grown in the district.

Compared to other districts in the region, Hai has one of the three districts with third largest planted area with permanent crops which are both planted in mixed area of (18,428 ha) and are dominated by banana, coffee, orange and guavas. However, other permanent crops are either not grown or are grown in very small quantities.

As with other districts in the region, most land clearing is done by hand slashing, however “no land clearing” is relatively high indicating bare land before cultivation. Practically all Land preparation is done by hand hoe plough, oxen plough; however a very small amount of land preparation is done by tractor.

The use of inputs in the region is comparative big, however district differences exist. Though small Hai has the second largest planted areas with improved seed in Kilimanjaro region. The district is among those with largest planted area with fertilizers and most of this is with farm yard manure, inorganic fertilizer and compost. Compared to other districts in the region, Hai district has the largest percent of its planted area with insecticides in the region. The use of fungicides was also the highest in the region. Also it has the third largest planted area with irrigation in the region with 3,570 hectares of irrigated land. Canals, dams wells, and pipe water is used as the source of irrigation water and hand bucket was mainly used. Buckets/Water cans are the most common means of irrigation water application and a very small amount of flood irrigation is used.

The most common method of crop storage is in air tight drums; sacks or open drums, in unprotected piles; however the proportion of households not storing crops in the district is among the lowest in the region. The district has one of the smallest numbers of households selling crops and the main reason for not selling is insufficient production. Hai district has the highest percent of households processing crops on farm by hand and a small percent of households selling processed crops mainly to neighbours and trader at farm. No sales were made to neither local market trade stores nor large scale farms. Access to credit is in existent in the district, it has one of the lowest proportions of households that accessed to credit in the region and for those who did not use credit it was because of unavailability of the agricultural credits.

A relatively low number of households receive extension services in Hai district and all of this is from the government. The quality of extension services was rated between good and very good by most of the households.

Tree farming is equally important in Hai (with 3,950 planted trees) and is mostly with *Gravellia* spp, *Senna* spp, *Albizia* spp and *Azadirachta* spp. The fifth smallest number of erosion control and water harvesting structures is found in Hai district and they are mainly Erosion Control Bunds and Water Harvesting Bunds. Other minor erosion control includes vetiver grass, terraces drainage ditches and tree belts.

The district has one of the highest number of cattle in the region and they are mostly all indigenous. Also it is among the districts with largest number of sheep and relatively low production of both goat and pigs in the region. It has a relative high number of chickens. Small numbers of donkeys and rabbits. Ducks are moderately kept in the district. As the districts with bid number of households reported tick problems, there was small number of households reported Tsetse problems in Hai district and has the moderate number of households de-worming livestock. The use of draft animals in the district is in existent and fish farming is practiced in the district.

It is amongst the districts with the best access to regional capital, tertiary market, feeder roads, tarmac roads, secondary schools, primary schools, primary and secondary markets and all weather roads; however it has one of the worst accesses to health clinics.

Hai district has the largest percent of households with no toilet facilities. The district has one of the smallest percent of households owning landline phones. Very moderately high number of households reported ownership of vehicles, mobile phones, wheel barrows, bicycles, iron and televisions/videos. It has the second largest number of households using mains electricity in the region. The most common source of energy for lighting is the wick lamp and practically all households use firewood for cooking. The district has one of the lowest percent of households with grass roofs (9 percent, and 87 percent of households having iron sheets. The most common source of drinking water is from piped water, Surface Water (Lake/Dam/River/Stream, unprotected spring wells and Protected / Covered Spring) and It has a moderate percent of households having two or one meal per day compared to other districts and is among the districts with a relative high percent of households with 3 meals per day. The district had the fourth highest percent of households that did not eat meat during the week prior to enumeration; however it is among the districts with high percent of households that did not eat fish during the week. Most households in the district seldom had problems with food satisfaction.

4. APPENDICES

Appendix I Tabulation List 123

Appendix II Tables 239

Appendix III Questionnaires..... 380

APPENDIX I: CROP TABULATION

NUMBER OF AGRICULTURAL HOUSEHOLDS.....	239
2.1 Number of Agricultural Households by type of household and District, the 2002/03 Agriculture Year.....	240
2.2 Number of Agriculture Households By Type of Holding and District, 2002/03 Agricultural Year	240
RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES.....	241
3.1: The Livelihood Activities/ Source of Income of the Household in Order of Importance by District.....	242
3.1a: First Most Importance	242
3.1b: Second Most Importance.....	242
3.1c: Third Most Importance	242
3.1d: Fourth Most Importance.....	242
3.1e: Fifth Most Importance.....	243
3.1f: Sixth Most Importance.....	243
3.1g: Seventh Most Importance	243
HOUSEHOLDS DEMOGRAPHYS:	245
3.0: Number of Agricultural Households and Average Household Size By Sex of the Head of Household and District, 2002/03 Agricultural Year	246
3.2: Number of Agricultural Household Members By Sex and Age Group, 2002/03 Agricultural Year	247
3.3: Number of Agricultural Household Members By Sex and Age Group, 2002/03 Agricultural Year	247
3.4: Number of Agricultural Household Members By Sex and District, 2002/03 Agricultural Year	248
3.5: Number of Agriculture Household Members 5 years and above Who Can Read and Write Languages By Type of Language and District, 2002/03 Agricultural Year.....	248
3.6 Number of Agricultural Household Members 5 years and above By School Attendance and District , 2002/03 Agricultural Year	248
3.7 Number of Agricultural Household Members By Main Activity and District, 2002/03 Agricultural Year	248

3.9	Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year	250
LAND ACCESS/OWNERSHIP.....		251
4.1	Number of Agricultural Households By Type of Land Ownership/Tenure and District, 2002/03 Agricultural Year	252
4.2	Area of Land by type of Ownership/Tenure (Hectare) and District, 2002/03 Agricultural Year	252
LAND USE.....		253
5.2	Number of Agricultural Households By Type of Land Use and District, 2002/03 Agricultural Year	254
5.1	: Area of Land by type of Land Use and District during 2002/03 Agricultural Year	254
5.3	Number of Agricultural Households by Whether All Land Available to the Household Was Used and District, 2002/03 Agricultural Year	255
5.4	Number of Agricultural Households by Whether they Consider Having Sufficient Land for the Household and District, 2002/03 Agricultural Year.....	255
5.5	Number of Agricultural Households by whether Female Members of the Household Own or Have Customary Right to Land and District, 2002/03 Agricultural Year.....	255
TOTAL ANNUAL CROP AND VEGETATION PRODUCTION – LONG AND SHORT RAINY SEASON		257
7.1 & 7.2a:	Number of Crop Growing Households and Planted Area (ha) by season and District	258
7.1 & 7.2b	Number of Crop Growing Households Planting Crops By Season and District.....	258
7.1 & 7.2c:	Area Planted (ha) and Quantity Harvested by Season and Crop for the 2002/03 Agricultural Year	259
7.1 & 7.2d:	Area Planted (ha) and Quantity Harvested by Season and Crop for the 2002/03 Agricultural Year.....	260
7.1 & 7.2h	Number of Agriculture Households and Planted Area By Insecticide Use and District for the 2002/03 agricultural year - Long & Short Rainy Seasons - Kilimanjaro region.....	261
7.1 & 7.2i	Number of Agriculture Households and Planted Area By Insecticide Use and District for the 2002/03 agricultural year - Long & Short Rainy Seasons- Kilimanjaro region.	261
7.1 & 7.2e	Total number of agriculture Households and Planted Area (ha) By Means of Soil Preparation and District - Long & Short Rainy Seasons - Kilimanjaro Region.....	262
7.1 & 7.2f	Total number of agriculture Households and Planted Area (ha) By Fertiliser Use and District for 2002/03 agricultural year Long & Short Rainy Season - Kilimanjaro Region.....	262
7.1 & 7.2g	Total number of agriculture Households and Planted Area (ha) By Irrigation Use and District for 2002/03 agricultural year Long & Short Rainy season - Kilimanjaro Region.	262
7.1 & 7.2j:	Number of Crop Growing Households and Planted Area By Fungicide Use and District During 2002/03 Crop Year LONG SEASON	263

7.1&7.2k: Number of Crop Growing Households and Planted Area By Improved Seed Use and District During 2002/03 Crop Year - LONG & SHORT Rainy Seasons	263
--	-----

ANNUAL CROP AND VEGE PRODUCTION -

SHORT RAINY SEASON.....265

7.1a Number of Households and Planted Area (ha) By Means Used for Soil Preparation and District During 2002/03 Crop Year-Short Rainy Season, Kilimanjaro Region	266
7.1b Total number of agriculture Households and Planted Area (ha) By Fertiliser Use and District - SHORT SEASON, Kilimanjaro Region.	266
7.1c Number of Crop Growing Households and Planted Area By Irrigation Use and District, SHORT SEASON, Kilimanjaro Region.	266
7.1d Number of Crop Growing Households and Planted Area By Pesticide Use and District, SHORT RAINY SEASON, Kilimanjaro Region.....	267
7.1e Number of Crop Growing Households and Planted Area By Herbicide Use and District, SHORT SEASON, Kilimanjaro Region	267
7.1f Number of Crop Growing Households and Planted Area By Fungicide Use and District SHORT RAINY SEASON, Kilimanjaro Region.....	268
7.1g Number of Crop Growing Households and Planted Area By Improved Seed Use and District, SHORT RAINY SEASON, Kilimanjaro Region.....	268
7.2a Number of Crop Growing Households and Planted Area (ha) By Means Used for Soil Preparation and District, LONG RAINY SEASON, Kilimanjaro Region.....	269
7.2b Number of Crop Growing Households and Planted Area By Fertilizer Use and District LONG RAINY SEASON, Kilimanjaro Region.....	269
7.2c Number of Crop Growing Households and Planted Area By Irrigation Use and District During LONG RAINY SEASON	269
7.2d Number of Crop Growing Households and Planted Area By Insecticide Use and District LONG RAINY SEASON, Kilimanjaro Region.....	270
7.2e Number of Crop Growing Households and Planted Area By Herbicide Use and District LONG RAINY SEASON, Kilimanjaro Region.....	270
7.2j Number of Crop Producing Households Reporting Selling Agricultural Products by District, 2002/03.....	270
7.2f Number of Crop Growing Households and Planted Area By Fungicide Use and District 2002/03 LONG RAINY SEASON, Kilimanjaro Region.....	271
7.2g Number of Crop Growing Households and Planted Area By Improved Seed Use and District, LONG RAINY SEASON, Kilimanjaro Region.....	271
7.2h Planted Area and Number of Crop Growing Households in LONG RAINY SEASON During 2002/03 Crop Year By Method of Land Clearing By Crop	273

ANNUAL CROP AND VEGETABLE PRODUCTION:	275
7.2.1 Number of Crop Growing Households, Planted Area (ha) and Maize Harevsted (tons) by season and District 2002/03 Agricultural Year	276
7.2.2 Number of Crop Growing Households, Planted Area (ha) and Paddy Harevsted (tons) by season and District 2002/03 Agricultural Year	276
7.2.3 Number of Crop Growing Households, Planted Area (ha) and Sorghum Harevsted (tons) by season and District 2002/03 Agricultural Year	276
7.2.4 Number of Crop Growing Households, Planted Area (ha) and Finger millet Harevsted (tons) by season and District 2002/03 Agricultural Year	276
7.2.7 Number of Crop Growing Households, Planted Area (ha) and Cassava Harevsted (tons) by season and District 2002/03 Agricultural Year	277
7.2.8 Number of Crop Growing Households, Planted Area (ha) and Sweet Potatoes Harevsted (tons) by season and District 2002/03 Agricultural Year.....	277
7.2.9 Number of Crop Growing Households, Planted Area (ha) and Irish Potatoes Harevsted (tons) by season and District 2002/03 Agricultural Year.....	278
7.2.10 Number of Crop Growing Households, Planted Area (ha) and Yams Harevsted (tons) by season and District 2002/03 Agricultural Year.....	278
7.2.11 Number of Crop Growing Households, Planted Area (ha) and Coco Yams Harevsted (tons) by season and District 2002/03 Agricultural Year.....	278
7.2.12 Number of Crop Growing Households, Planted Area (ha) and Beans Harevsted (tons) by season and District 2002/03 Agricultural Year.....	278.
7.2.17 Number of Crop Growing Households, Planted Area (ha) and Sunflower Harevsted (tons) by season and District 2002/03 Agricultural Year.....	279
7.2.18 Number of Crop Growing Households, Planted Area (ha) and Simsim Harevsted (tons) by season and District 2002/03 Agricultural Year.....	279
7.2.19 Number of Crop Growing Households, Planted Area (ha) and Simsim Harevsted (tons) by season and District 2002/03 Agricultural Year.....	279
7.2.21 Number of Crop Growing Households, Planted Area (ha) and Onions Harevsted (tons) by season and District 2002/03 Agricultural Year.....	280
7.2.22 Number of Crop Growing Households, Planted Area (ha) and Cabbage Harevsted (tons) by season and District 2002/03 Agricultural Year.....	280
7.2.23 Number of Crop Growing Households, Planted Area (ha) and Tomatoes Harevsted (tons) by season and District 2002/03 Agricultural Year.....	280
7.2.24 Number of Crop Growing Households, Planted Area (ha) and Spinach Harevsted (tons) by season and District 2002/03 Agricultural Year.....	280
7.2.25 Number of Crop Growing Households, Planted Area (ha) and Carrot Harevsted (tons) by season and District 2002/03 Agricultural Year.....	281

7.2.26	Number of Crop Growing Households, Planted Area (ha) and Amaranthas Harevsted (tons) by season and District 2002/03 Agricultural Year.....	281
7.2.27	Number of Crop Growing Households, Planted Area (ha) and Pumpkins Harevsted (tons) by season and District 2002/03 Agricultural Year.....	281
7.2.28	Number of Crop Growing Households, Planted Area (ha) and Cotton Harevsted (tons) by season and District 2002/03 Agricultural Year.....	281
7.2.29	Number of Crop Growing Households, Planted Area (ha) and Tobacco Harevsted (tons) by season and District 2002/03 Agricultural Year.....	282
PERMANENT CROPS		283
7.3	Production of Permanent Crops by Crop Type and District, Kilimanjaro Region.....	284
	cont Production of Permanent Crops by Crop Type and District, Kilimanjaro Region.....	285
7.4:	Total Area Planted with Banana by District - Kilimanjaro Region	287
7.5:	Total Area Planted with Coffee by District - Kilimanjaro Region.....	287
7.6:	Total Area Planted with Mangoes by District - Kilimanjaro Region.....	287
7.7:	Total Area Planted with Avocado by District - Kilimanjaro Region	287
	Cont Planted Area with Fertiliser by Fertiliser Type and crop	288
AGROPROCESSING		293
8.1.1a	Number of Crop Growing Households reported to have Processed Farm Products by District, 2002/03 agricultural year.	294
8.1.1b	Number of Crop Growing Households Reporting Processing of Farm Products Produced During 2002/03 Agriculture Year By Method of Processing and District.....	294
8.1.1c	Number of Crop Growing Households Reporting Processing of Farm Products Produced During 2003/04 Agricultural Year By Use of Product and Crop.....	295
8.1.1d	Number of Crop Growing Households Reporting Processing of Farm Products Produced During 2003/04 Agricultural Year By Location of Sale of Product and Crop.....	295
8.1.1e	Number of Crop Growing Households By Main Product During 2002/03 Agriculture Year and District	296
8.1.1.f	Number of Crop Growing Households By Use of Primary Processed Product During 2002/03 Agriculture Year and District	296
8.1.1.g	Number of Crop Growing Households By Where Product Sold During 2002/03 Agriculture Year and District.....	296
8.1.1.h	Number of Crop Growing Households By By-Product During 2002/03 Agriculture Year and District	296

MARKETING	297
10 Number of Crop Producing Households Reporting Selling Agricultural Products During 2003/04 By District.....	298
10 Number of Crop Producing Households Reporting Not Selling Agricultural Products During 2003/04 By Reason for Not Selling Crops By District	298
10.3 Proportion of Households who Reported Main Reason for Not Selling their Crops by District During 2002/03 Agricultural Year.....	298
IRRIGATION.....	299
11.1: Number and Percent of Crop Growing Households Reporting of Practicing Irrigation During 2002/03 Agriculture Year By District.....	300
11.2: Area of Irrigated and Non Irrigatable (ha) Land By District	300
11.3: Number of Households Using Irrigation By Source of Irrigation Water During 2003/04 Agricultural Year By District.....	300
11.4: Number of Households Using Irrigation By Method of Irrigation of Obtaining Water By District	300
11.5: Number of Households Using Irrigation By Method of Irrigation Application By District	301
11.6: Number of Households With Erosion Control/Water Harvesting Facilities on their Land By District.....	301
11.7 Number of Erosion Control Harvesting Structures By Type and District	301
ACCESS TO FARM INPUTS/IMPLEMENTS	303
12.1.1 Number of Agricultural Households Using Chemical Fertilizer by District, 2002/03 Agricultural Year	304
12.1.2 Number of Agricultural Households Using Farm Yard Manure by District, 2002/03 Agricultural Year	304
12.1.3 Number of Agricultural Households Using COMPOST Manure by District, 2002/03 Agricultural Year	304
12.1.4 Number of Agricultural Households Using Pesticides/Fungicides by District, 2002/03 Agricultural Year	305
12.1.5 Number of Agricultural Households Using Herbicides by District, 2002/03 Agricultural Year ..	305
12.1.6 Number of Agricultural Households using Improved Seeds by District, 2002/03 Agricultural Year	305
12.1.7 Number of Agricultural Households and Source of Chemical Fertilizer by District, 2002/03 Agricultural Year	306
12.1.8 Number of Agricultural Households and Source of Farm Yard Manure by District, 2002/03 Agricultural Year	306

12.1.9 Number of Agricultural Households and Source of COMPOST Manure by District, 2002/03 Agricultural Year	306
12.1.10 Number of Agricultural Households and Source of Pesticides/Fungicides by District, 2002/03 Agricultural Year	307
12.1.11 Number of Agricultural Households and Source of Herbicides by District, 2002/03 Agricultural Year	307
12.1.12 Number of Agricultural Households Source of Improved Seeds by District, 2002/03 Agricultural Year	307
12.1.13 Number of Agricultural Households and Distance to Source of Chemical Fertilizer by District, 2002/03 Agricultural Year	308
12.1.14 Number of Agricultural Households and Distance to Source of Farm Yard Manure by District, 2002/03 Agricultural Year	308
12.1.15 Number of Agricultural Households and Distance to Source of COMPOST Manure by District, 2002/03 Agricultural Year	309
12.1.16 Number of Agricultural Households and Distance to Source of Pesticides/Fungicides by District, 2002/03 Agricultural Year	309
12.1.18 Number of Agricultural Households and Distance to Source of Improved Seeds by District, 2002/03 Agricultural Year	309
12.1.25 Number of Agricultural Households and Reason for NOT using Chemical Fertilizer by District, 2002/03 Agricultural Year	310
12.1.26 Number of Agricultural Households and Reason for NOT using Farm Yard Manure by District, 2002/03 Agricultural Year	310
12.1.27 Number of Agricultural Households and Reason for NOT using COMPOST Manure by District, 2002/03 Agricultural Year	310
12.1.28 Number of Agricultural Households and Reason for NOT using Pesticides/Fungicides by District, 2002/03 Agricultural Year	311
12.1.29 Number of Agricultural Households and Reason for NOT using Herbicides by District, 2002/03 Agricultural Year	311
12.1.30 Number of Agricultural Households and Reason for NOT using Improved Seeds by District, 2002/03 Agricultural Year	311
12.1.31 Number of Agricultural Households and Quality of Chemical Fertilizer by District, 2002/03 Agricultural Year	312
12.1.32 Number of Agricultural Households and Quality of Farm Yard Manure by District, 2002/03 Agricultural Year	312
12.1.33 Number of Agricultural Households and Quality of COMPOST Manure by District, 2002/03 Agricultural Year	312
12.1.34 Number of Agricultural Households and Quality of Pesticides/Fungicides by District, 2002/03 Agricultural Year	313

12.1.35 Number of Agricultural Households and Quality of Herbicides by District, 2002/03 Agricultural Year	313
12.1.36 Number of Agricultural Households and Quality of Improved Seeds by District, 2002/03 Agricultural Year	313
12.1.37 Number of Agricultural Households With Plan to use Next Year Chemical Fertilizer by District, 2002/03 Agricultural Year	313
12.1.38 Number of Agricultural Households With Plan to use Next Year Farm Yard Manure by District, 2002/03 Agricultural Year	314
12.1.39 Number of Agricultural Households With Plan to use Next Year COMPOST Manure by District, 2002/03 Agricultural Year	314
12.1.40 Number of Agricultural Households With Plan to use Next Year Pesticides/Fungicides by District, 2002/03 Agricultural Year	315
12.1.41 Number of Agricultural Households With Plan to use Next Year Herbicides by District, 2002/03 Agricultural Year	315
12.1.42 Number of Agricultural Households using Improved Seeds by District, 2002/03 Agricultural Year	315
AGRICULTURE CREDITS	317
13.2a: Number of Households Receiving Credit By Sex of Household Member Receiving Credit By District	318
13.2b: Number of Households Receiving Credit By Source of Credit By District.....	318
13.2c: Number of Households Receiving Credit By Reason for Not Using Credit By District	319
13.2d: Number of Credits Received By Main Purpose of Credit and District	319
TREE FARMING AND AGROFORESTRY	321
14.1: Number of Planted Trees By Species and District, Kilimanjaro Region	322
14.2 Number of Households with Planted Trees on their Land and and Number of Trees by Planting Location and District	323
14:3 Main Use of Trees By District	323
14.4: Number of Households By Distance to Community Planted Forest (Km) By District.....	324
14: 5 Number of Responses by second use of Trees and District for 2002/03.....	324
CROP EXTENSION	325
15.1 Number of Households Receiving Extension Messages By District	326
15.2: Number of Households By Quality of Extension Messages by District during the 2002/03 Agricultural year, Kilimanjaro Region.....	326
15.3: Number of Households By Source of Extension Messages By District during the 2002/03 Agricultural Year, Kilimanjaro Region.....	326

15.4:	Number of Households By Receiving Advice on Plant Spacing By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.....	327
15.5:	Number of Households By Receiving Advice on the Use of Agro-chemicals By Source of Messages By District Kilimanjaro Region.....	327
15.6:	Number of Households By Receiving Advice on the Erosion Control By Source of Messages By District Kilimanjaro Region	327
15.7:	Number of Households By Receiving Advice on the use of Organic Fertilisers By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	328
15.8:	Number of Households By Receiving Advice on the use of Inorganic Fertilisers By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	328
15.9:	Number of Households By Receiving Advice on the use of Improved seeds By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.....	328
15.10:	Number of Households By Receiving Advice on the use of Mechanisation By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.....	329
15.11:	Number of Households By Receiving Advice on the use of Irrigation Technology By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	329
15.12:	Number of Households By Receiving Advice on the use of use of Crop storage By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	329
15.13:	Number of Households By Receiving Advice on vermin control By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	330
15.14:	Number of Households By Receiving Advice on Agro-processing By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.....	330
15.15:	Number of Households By Receiving Advice on Agro-Forestry By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	330
15.16:	Number of Households By Receiving Advice on Beekeeping By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	331
15.17:	Number of Households By Receiving Advice on Fish Farming By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.	331
15.18:	Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 1) During the 2002/03 Agricultural Year, Kilimanjaro Region.....	331
15.19:	Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 2) During the 2002/03 Agricultural Year, Kilimanjaro Region.....	332
15.20:	Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 3) During the 2002/03 Agricultural Year, Kilimanjaro Region.....	332
15.20:	Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 3) During the 2002/03 Agricultural Year, Kilimanjaro Region.....	332
15.20:	Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 5) During the 2002/03 Agricultural Year, Kilimanjaro Region.....	333

ANIMAL CONTRIBUTION TO CROP PRODUCTION	335
17 Number of Households Using Draft Animal to Cultivate Land By District	336
17.2 Type of Draft By Number Owened, Used and Area Cultivated (Acres) By District During 2002/03 Agriculture Year	336
17.3 Number of Crop Growing Households Using Organic Fertilizer By Regio During 2002/03 Agriculture Year	336
17.4 Area of Farm Yard Manure and Compost Application By District During 2002/03 Agriculture Year	336
CATTLE PRODUCTION	337
18.1a Total Number of Households Rearing Cattle By District During 2002/03 Agriculture Year	338
18.3b: Number of Households Rearing Cattle, Head of Cattle and Average Head per Household by Herd Size as of 2002/03	338
18.4c Number of Cattle by Category and Type of Cattle as of 1st October 2003	339
18.2: Number of Cattle By Type and District as of 1st October, 2003	340
18.3: Number of Indigenous Cattle By Category and as of 1st October, 2003	340
18.4: Number of Indigenous Cattle By Category and as of 1st October, 2003	340
GOAT PRODUCTION.....	341
19.1: Total Number of Goats by Type and District as of 2st October, 2003	342
19.2: Number of Households Rearing Goats, Herd of Goats and Average Head per Household by Herd Size as of 1st October, 2003	342
19.:3 Total Number of Goats by Category and Type of Goat as of 1st October, 2003 and District	343
19.4 Number of Indigenous Goat by Category and District as of 1st October, 2003	343
19.5: Number of Improved Meat Goat by Category and District as of 1st October, 2003	343
19.6 Number of Improved Dairy Goat by Category and District as of 1st October, 2003.....	344
19.7 Number of Total Goat by Category and District as of 1st October, 2003.....	344
SHEEP PRODUCTION	345
20.1: Total Number of Sheep By Breed Type During the 2002/03 Agriculture Year	346
20.2: Number of Households Rearing Sheep by District as of 1st October, 2002/03 Agriculture Year.....	346
20.3 Number of Sheep by Type of Sheep and District as of 1st October, 2002/03	346
20.4: Number of Sheep per Household by Category and district as of 1st October 2003.....	346

20.5:	Number of Households and Heads of Sheep by Herd Size on 1st October 2003.	347
20.6	Number of Indigenous Sheep by Category of Sheep and District as of 1st October, 2002/03 Agriculture Year	347
20.7	Total Number of Sheep by Category of Sheep and District as of 1st October, 2002/03 Agriculture Year	347
PIGS PRODUCTION		349
21.3.1	Number of Households Rearing Pigs, Herd of Pigs aand Average Head of per Household by Herd Size as of 1st October, 2003	350
21.2	Number of Households Raising Pig by District during 2002/03 Agriculture Year	350
21.3	Total Number of Pigs by Category of Pigs and District as of 1st October, 2003	350
LIVESTOCK PESTS AND PARASITE CONTROL.....		351
22.1	Number and Percent of agricultural households reporting to have dewormed livestock during 2002/03 Agriculture Year by District.....	252
22.2	Number and Percent of agricultural households reporting to have dewormed livestock during 2002/03 Agriculture Year by District and type of dewormed Livestock	252
22.5	Number and Percent of agricultural households reporting to have encountered tsetse flies problems during 2002/03 Agriculture Year by District.	252
22.6	Number and Percent of agricultural households by Method of Tsetse flies Control during 2002/03 Agriculture Year and District.	252
OTHER LIVESTOCK.....		253
23a:	Total number of Other Livestock by Type as of 1st October 2003.....	254
23b:	Number of Households Rearing and number of Other Livestock by Type and District.....	254
23c:	Number of households with chicken and Category of Chicken by Flock Size	254
FISH FARMING		255
28.1	Number of Agricultural Households involved in Fish Farming and District, 2002/03 Agricultural Year	256
28.2	Number of Agricultural Households By System of Farming and District, 2002/03 Agricultural Year	256
28.3	Number of Agricultural Households By Source of Fingerings and District, 2002/03 Agricultural Year	256
28.4	Number of Agricultural Households By Location of Selling Fish and District, 2002/03 Agricultural Year	256
28.5	Total Number of Fish Harvested by Type and District, 2002/03 Agricultural Year.....	256

LIVESTOCK EXTENSION	257
29.1a: Number of Agricultural Households Receiving Advice By Type of Service Provider and District, 2002/03 Agricultural Year	258
29.1b: Number of Agricultural Households Receiving Extension Advice on Calf Rearing By Source and District, 2002/03 Agricultural Year	258
29.1c: Number of Agricultural Households Receiving Extension Advice on Proper Milking By Source and District, 2002/03 Agricultural Year	258
29.1d: Number of Agricultural Households Receiving Extension Advice on Milk Hygiene By Source and District, 2002/03 Agricultural Year.....	259
29.1e: Number of Agricultural Households Receiving Extension Advice on Disease Control By Source and District, 2002/03 Agricultural Year.....	259
29.1f: Number of Agricultural Households Receiving Extension Advice on Herd /Flock Size and Selection By Source and District, 2002/03 Agricultural Year	259
29.1g: Number of Agricultural Households Receiving Extension Advice Pasture Establishment and Selection By Source and District, 2002/03 Agricultural Year.....	260
29.1h: Number of Agricultural Households Receiving Extension Advice on Group Formation and Strengthening By Source and District, 2002/03 Agricultural Year	260
29.1i: Number of Agricultural Households Receiving Extension Advice on Calf Rearing By Source and District, 2002/03 Agricultural Year.....	261
29.1j: Number of Agricultural Households Receiving Extension Advice on Use of Improved Bulls By Source and District, 2002/03 Agricultural Year	262
29.1h: Number of Agricultural Households By Quality of Extension Services and District, 2002/03 Agricultural Year	262
ACCESS TO INTRASTRUCTURE AND OTHER SERVICES.....	263
33.01a: Mean distances from holders dwellings to Infrastructures and services by District	264
33.01b: Mean distance from holders dwellings to infrastrures and services by District.....	265
33.01c: Mean distance from holders dwellings to all Weather roads by District.....	265
33.01d: Mean distance from holders dwellings to Feeder Roads by District.....	265
33.01e: Mean distance from holders dwellings to Hospital by District	266
33.01f: Mean distance from holders dwellings to Health Clinic by District.....	266
33.01g: Mean distance from holders dwellings to Primary School by District.....	266
33.1h: Number of Households to Regional Capital	267
33.01j : Number of Households by Distance to Tarmac Road and District for the 2002/03 Agricultural Year	267

33.01k: Number of Households by Distance to Primary Market for the 2002/03 Agricultural Year	267
33.01l: Number of Households by Distance to Tertiary Market for the 2002/03 Agricultural Year	267
33.01m: Number of Households by Distance to Secondary Market for the 2002/03 Agricultural Year	267
33.19a Number of Agricultural Households by Satisfaction of Using Veterinary Clinic and District, 2002/03 Agricultural Year	268
33.19b Number of Households by Satisfaction of Using Extension Centre and District, 2002/03 Agricultural Year	268
33.19c Number of Households by Satisfaction of Using Research Centre and District, 2002/03 Agricultural Year	268
33.19d Number of Households by Satisfaction of Using Plant Protection Lab and District, 2002/03 Agricultural Year	269
33.19e Number of Households by Satisfaction of using Land Registration Office and District, 2002/03 Agricultural Year	269
33.19f Number of Households by Satisfaction of using Livestock Development centre and Registration Office and District, 2002/03 Agricultural Year	269
33.19g Number of Households by Level of satisfaction of the Service and District, 2002/03 Agricultural Year	270
HOUSEHOLDS FACILITIES.....	271
34-1: Number of Agricultural Households by Type of TOILET by District during the 2002/03 Agricultural Year	372
34-2: Number of Agricultural Households Reported Average Number of Rooms and Type of Roofing Materials by District for the 2002/03 Agricultural Year	372
34.3: Number of Agricultural Households by Type of Owned Assets and District, 2002/03 Agricultural Year	372
34.4 Number of Agricultural Households by Main Source of Energy Used for Lighting and District, 2002/03 Agricultural Year.....	373
34.5: Number of Agricultural Households by Main Source of Energy Used for Cooking and District, 2002/03 Agricultural Year.....	373
34.6: Number of Agricultural Households by Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year	374
34.7: Proportion of Agricultural Households by Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year	374
34.8 Number of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year	375
34.9 Proportion of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year	375

34.10: Number of Agricultural Households by Time spent to and from Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year	376
34.9 Proportion of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year	376
34.12: Number of Households by Number of Meals the Household Normally Took per Day by District.....	377
34.13: Number of Households by Number of Days the Household Consumed Meat during the Preceding Week by District	377
34.14: Number of Households by Number of Days the Household Consumed Fish during the Preceding Week by District	378
34-15: Number of Agricultural Households Reporting the Status of Food Satisfaction of the Household during the Preceeding Year by District.....	378
34-16: Number of Households by Main Source of Income and District, 2002/03 Agricultural Year.....	379
34.17: Number of hoseholds BY Type of Roofing Materials and District during 2002/03 Agricultural Year	379

APPENDIX II: CROPS

Type of Agriculture Household.....	
Number of Agriculture Households	239
Rank of Importance of Livelihood activities.....	241
Households Demographs	245
Land access/ownership.....	251
Land Use	253
Total annual crop & vege production - long and short rainy season.....	257
Annual crop and vege production - short rainy season	265
Annual crop and vege production-long rainy season	275
Permanent Crops	283
Agroprocessing	293
Marketing	297
Irrigation.....	299
Access to Farm Inputs/ Implements.....	303
Agriculture Credit	317
Tree Farming	321
Crop Extension.....	325
Animal Contribution to crop production.....	335
Cattle Production.....	337
Goats Production	341
Sheep Production	345
Pig Production.....	349
Livestock Pests and Parasite Control	351
Other livestock	353
Fish Farming	355
Livestock Extension.....	357
Access to Infrastructure and Other services	363
Household Facilities.....	371

NUMBER OF AGRICULTURAL HOUSEHOLDS

2.1 TYPE OF AGRICULTURE HOUSEHOLD: Number of Agricultural Households by type of household and District, the 2002/03 Agriculture Year

Agriculture, Non Agriculture and Urban Households									
District	Rural Households Involved in Agriculture	% of Total Rural Households	Rural Households NOT Involved in Agriculture	% of Total Rural Households	Total Rural Households	% of Total Rural Households	Urban Households	% of Total Rural Households	Total Number of Households (From 2002 Pop Census)
Rombo	47,014	94	742	1	47,756	95	2,367	5	50,123
Mwanga	16,749	69	993	4	17,742	73	6,584	27	24,326
Same	29,103	65	890	2	29,993	67	14,481	33	44,474
Moshi Rural	76,826	91	6,480	8	83,306	98	1,556	2	84,862
Hai	46,481	80	4,388	8	50,869	88	7,187	12	58,056
Total	216,173	83	13,493	5	229,666	88	32,175	12	261,841

2.2 TYPE OF AGRICULTURE HOUSEHOLD: Number of Agriculture Households By Type of Holding and District, 2002/03 Agricultural Year

District	Type of Agriculture Household										Total Number of Agricultural Households	Total Number of Households Growing Crops	Total Number of Households Rearing Livestock
	Crops Only		Livestock Only		Pastoralist		Crops & Livestock		Total				
	Number	%	Number	%	Number	%	Number	%	Number	%			
Rombo	9,066	16	0	0	0	0	37,949	24	47,014	22	47,014	9,066	37,949
Mwanga	3,957	7	232	12	35	100	12,525	8	16,749	8	16,749	3,957	12,792
Same	10,597	18	480	25	0	0	18,026	12	29,103	13	29,103	10,597	18,506
Moshi Rural	20,458	35	260	13	0	0	56,108	36	76,826	36	76,826	20,458	56,368
Hai	13,642	24	980	50	0	0	31,859	20	46,481	22	46,481	13,642	32,839
Total	57,719	100	1,951	100	35	100	156,467	100	216,173	100	216,173	57,719	158,453

RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES

3.1: The Livelihood Activities/ Source of Income of the Household in Order of Importance by District

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	2	1	3	4	6	7	5
Mwanga	1	3	4	2	6	7	5
Same	1	2	3	5	6	7	4
Moshi Rural	1	2	3	4	6	7	5
Hai	1	2	3	4	6	7	5
Total	4	1	2	3	6	7	5

3.1a: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: First Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	9,283	21,822	1,160	14,075	469	0	118
Mwanga	5,657	2,464	721	5,488	1,963	35	114
Same	21,594	1,979	1,473	3,257	1,171	74	148
Moshi Rural	21,148	25,807	1,812	25,086	3,090	0	503
Hai	20,115	10,150	4,611	10,061	891	111	576
Total	77,797	62,222	9,778	57,967	7,584	220	1,458

3.1b: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Second Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	21,088	12,592	8,634	4,116	588	0	932
Mwanga	5,452	4,844	3,207	1,931	359	108	753
Same	5,570	10,454	4,930	5,133	1,822	270	1,802
Moshi Rural	27,805	19,980	17,344	6,611	3,020	136	2,667
Hai	15,900	11,931	8,937	5,143	1,332	101	2,916
Total	75,815	59,800	43,054	22,935	7,121	615	9,069

3.1c: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Third Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	10,804	5,760	19,180	3,993	940	118	5,391
Mwanga	3,663	2,562	3,653	1,867	674	125	2,941
Same	1,238	4,303	7,982	4,340	1,541	287	6,934
Moshi Rural	11,215	8,344	23,406	10,474	3,022	138	9,609
Hai	6,240	8,436	13,991	4,909	570	0	9,774
Total	33,160	29,405	68,212	25,583	6,745	667	34,648

3.1d: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Fourth Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	3,277	2,527	11,268	8,417	1,396	353	17,455
Mwanga	1,184	1,462	3,958	1,264	1,556	44	2,674
Same	290	2,182	4,126	3,451	3,066	367	8,636
Moshi Rural	6,729	2,259	12,988	5,439	4,780	275	17,484
Hai	1,965	3,629	5,328	5,874	1,292	181	15,894
Total	13,445	12,058	37,668	24,446	12,090	1,219	62,144

3.1e: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Fifth Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	585	1,399	4,559	2,337	1,508	0	16,039
Mwanga	211	494	844	717	713	0	3,435
Same	0	734	1,326	1,084	1,916	0	4,738
Moshi Rural	1,993	476	6,425	1,827	3,614	259	14,779
Hai	627	1,072	2,538	1,212	1,550	125	9,825
Total	3,417	4,176	15,693	7,178	9,301	384	48,816

3.1f: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES: Sixth Most Importance

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	118	0	350	354	692	0	1,402
Mwanga	0	0	126	88	211	0	651
Same	0	365	292	292	74	74	808
Moshi Rural	138	125	381	271	661	0	4,061
Hai	0	0	107	245	614	0	356
Total	256	490	1,257	1,250	2,252	74	7,278

**3.1g: RANK OF IMPORTANCE OF LIVELIHOOD ACTIVITIES:
Seventh Most Importance**

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Tree / Forest Resources
Rombo	118	221	118	0
Mwanga	43	0	44	44
Same	74	74	0	74
Moshi Rural	0	139	0	0
Total	235	434	161	118

HOUSEHOLDS DEMOGRAPHYS:

3.0: HOUSEHOLDS DEMOGRAPHICS: Number of Agricultural Households and Average Household Size By Sex of the Head of Household and District, 2002/03 Agricultural Year

District	Male			Female			Total		
	Number of Household Members	Number of Households	Average Household Size	Number of Household Members	Number of Households	Average Household Size	Number of Household Members	Number of Households	Average Household Size
Rombo	262,603	42,890	6	21,086	4,124	5	283,689	47,014	6
Mwanga	68,026	11,637	6	21,536	5,111	4	89,563	16,749	5
Same	124,521	24,155	5	19,503	4,948	4	144,024	29,103	5
Moshi Rural	320,784	62,408	5	56,305	14,418	4	377,089	76,826	5
Hai	196,343	39,697	5	24,498	6,785	4	220,842	46,481	5
Total	972,277	180,786	5	142,929	35,386	4	1,115,206	216,173	5

District	Annual Crop Farming	Permanent Crop Farming	Livestock Keeping / Herding	Off Farm Income	Remittances	Fishing / Hunting & Gathering	Tree / Forest Resources
Rombo	2	1	3	4	6	7	5
Mwanga	1	3	4	2	6	7	5
Same	1	2	3	5	6	7	4
Moshi Rural	1	2	3	4	6	7	5
Hai	1	2	3	5	6	7	4
Total	1	5	4	2	6	7	3

3.2: HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Sex and Age Group, 2002/03 Agricultural Year

Age Group	Sex					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Less than 4	47,819	52	44,669	48	92,488	100
05 - 09	74,298	47	84,389	53	158,687	100
10 - 14	89,194	50	88,989	50	178,182	100
15 - 19	57,553	47	64,089	53	121,642	100
20 - 24	42,869	49	44,148	51	87,016	100
25 - 29	33,977	48	36,167	52	70,144	100
30 - 34	30,228	47	34,291	53	64,519	100
35 - 39	26,198	49	27,264	51	53,462	100
40 - 44	24,985	47	28,734	53	53,720	100
45 - 49	20,703	44	26,280	56	46,983	100
50 - 54	23,971	49	24,534	51	48,505	100
55 - 59	18,433	57	14,104	43	32,537	100
60 - 64	14,908	51	14,369	49	29,277	100
65 - 69	11,574	51	11,318	49	22,891	100
70 - 74	11,907	52	11,076	48	22,983	100
75 - 79	8,250	60	5,559	40	13,809	100
80 - 84	4,209	49	4,390	51	8,599	100
Above 85	4,141	42	5,621	58	9,762	100
Total	545,216	49	569,990	51	1,115,206	100

3.3: HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Sex and Age Group, 2002/03 Agricultural Year

Age Group	Sex					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Less than 4	47,819	9	44,669	8	92,488	8
05 - 09	74,298	14	84,389	15	158,687	14
10 - 14	89,194	16	88,989	16	178,182	16
15 - 19	57,553	11	64,089	11	121,642	11
20 - 24	42,869	8	44,148	8	87,016	8
25 - 29	33,977	6	36,167	6	70,144	6
30 - 34	30,228	6	34,291	6	64,519	6
35 - 39	26,198	5	27,264	5	53,462	5
40 - 44	24,985	5	28,734	5	53,720	5
45 - 49	20,703	4	26,280	5	46,983	4
50 - 54	23,971	4	24,534	4	48,505	4
55 - 59	18,433	3	14,104	2	32,537	3
60 - 64	14,908	3	14,369	3	29,277	3
65 - 69	11,574	2	11,318	2	22,891	2
70 - 74	11,907	2	11,076	2	22,983	2
75 - 79	8,250	2	5,559	1	13,809	1
80 - 84	4,209	1	4,390	1	8,599	1
Above 85	4,141	1	5,621	1	9,762	1
Total	545,216	100	569,990	100	1,115,206	100

3.4: HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Sex and District, 2002/03 Agricultural Year

District	Sex					
	Male		Female		Total	
	Number	%	Number	%	Number	%
Rombo	139,304	49	144,385	51	283,689	100
Mwanga	41,728	47	47,834	53	89,563	100
Same	72,859	51	71,164	49	144,024	100
Moshi Rur	179,916	48	197,173	52	377,089	100
Hai	111,408	50	109,434	50	220,842	100
Total	545,216	49	569,990	51	1,115,206	100

3.5: HOUSEHOLDS DEMOGRAPHYS: Number of Agriculture Household Members 5 years and above Who Can Read and Write Languages By Type of Language and District, 2002/03 Agricultural Year

District	Read & Write									
	Swahili		Swahili & English		Any Other Language		Don't Read / Write		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Rombo	187,372	73	32,643	13	230	0	37,925	15	258,169	100
Mwanga	62,085	78	9,110	11	216	0	8,145	10	79,556	100
Same	98,657	76	11,406	9	0	0	19,676	15	129,738	100
Moshi Rural	258,990	74	55,110	16	0	0	37,416	11	351,516	100
Hai	132,991	65	39,688	19	119	0	30,942	15	203,740	100
Total	740,094	72	147,957	14	564	0	134,103	13	1,022,719	100

3.6 HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members 5 years and above By School Attendance and District , 2002/03 Agricultural Year

District	School Attendance							
	Attending School		Completed		Never Attended to School		Total	
	Number	%	Number	%	Number	%	Number	%
Rombo	92,449	36	135,054	52	30,666	12	258,169	100
Mwanga	31,343	39	40,961	51	7,252	9	79,556	100
Same	48,399	37	66,715	51	14,625	11	129,738	100
Moshi Rural	133,184	38	187,488	53	30,843	9	351,516	100
Hai	69,973	34	105,853	52	27,913	14	203,740	100
Total	375,349	37	536,070	52	111,299	11	1,022,719	100

3.7 HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Main Activity and District, 2002/03 Agricultural Year

District	Main Activity							
	Crop/Seaweed Farming		Livestock Keeping / Herding		Livestock Pastoralist		Fishing	
	Number	%	Number	%	Number	%	Number	%
Rombo	99,057	38	1,278	0.5	354	0.1	118	0.0
Mwanga	29,060	37	684	0.9	115	0.1	117	0.1
Same	58,823	45	3,467	2.7	148	0.1	0	0.0
Moshi Rural	119,230	34	4,653	1.3	261	0.1	0	0.0
Hai	87,085	43	6,616	3.2	227	0.1	111	0.1
Total	393,255	38	16,698	1.6	1,105	0.1	346	0.0

**cont.... HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members
By Main Activity and District, 2002/03 Agricultural Year**

District	Government / Parastatal		Private - NGO / Mission / etc		Self Employed (Non Farming) with Employees		Self Employed (Non Farming) without Employees		Unpaid Family Helper (Non Agriculture)	
	Number	%	Number	%	Number	%	Number	%	Number	%
Rombo	6,790	3	21,304	8	9,701	4	7,893	3	2,456	1
Mwanga	1,584	2	3,926	5	3,127	4	1,740	2	802	1
Same	1,980	2	2,434	2	1,881	1	1,012	1	370	0
Moshi Rur	9,624	3	24,206	7	17,187	5	9,526	3	3,048	1
Hai	3,562	2	8,000	4	6,201	3	3,992	2	1,766	1
Total	23,540	2	59,869	6	38,097	4	24,164	2	8,443	1

**cont.... HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members
By Main Activity and District, 2002/03 Agricultural Year**

District	Not Working & Available	Not Working & Unavailable	Housemaker / Housewife	Student	Unable to Work / Too Old / Retired / Sick / Disabled					
Rombo	695	0	117	0	1,994	1	87,402	34	15,962	6
Mwanga	290	0	38	0	521	1	30,110	38	4,999	6
Same	1,019	1	142	0	557	0	45,533	35	9,167	7
Moshi Rur	3,446	1	589	0	10,445	3	122,672	35	21,957	6
Hai	1,499	1	338	0	5,798	3	63,490	31	11,548	6
Total	6,950	1	1,224	0	19,316	2	349,207	34	63,633	6

**3.6 HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By
Level of involvement in Farming Activity and District, 2002/03 Agricultural Year**

District	Involvement in Farming									
	Works Full-time on Farm		Works Part-time on Farm		Rarely Works on Farm		Never Works on Farm		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Rombo	98,570	38	13,678	5	69,403	27	76,519	30	258,169	100
Mwanga	28,421	36	6,546	8	24,600	31	19,989	25	79,556	100
Same	57,569	44	6,654	5	35,614	27	29,901	23	129,738	100
Moshi Rural	119,067	34	27,770	8	81,260	23	123,419	35	351,516	100
Hai	85,888	42	13,897	7	47,246	23	56,709	28	203,740	100
Total	389,514	38	68,545	7	258,124	25	306,537	30	1,022,719	100

3.9 HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Education Level							
	Under Standard One		Standard One		Standard Two		Standard Three	
	Number	%	Number	%	Number	%	Number	%
Rombo	2,117	2	582	0	2,344	2	2,792	2
Mwanga	209	1	287	1	952	2	869	2
Same	146	0	0	0	786	1	1,210	2
Moshi Rural	1,899	1	1,194	1	2,251	1	3,896	2
Hai	251	0	347	0	1,612	2	2,362	2
Total	4,623	1	2,410	0	7,945	1	11,128	2

cont... HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Education Level							
	Standard Four		Standard Five		Standard Six		Standard Seven	
	Number	%	Number	%	Number	%	Number	%
Rombo	12,685	9	1,845	1	3,236	2	91,601	68
Mwanga	5,021	12	538	1	996	2	25,993	63
Same	7,723	12	1,572	2	2,962	4	45,831	69
Moshi Rural	18,038	10	2,788	1	6,809	4	111,773	60
Hai	14,251	13	2,387	2	2,252	2	67,658	64
Total	57,717	11	9,130	2	16,254	3	342,855	64

cont... HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Standard Eight		Training After Primary		Pre Form One		Form One	
	Number	%	Number	%	Number	%	Number	%
	Rombo	1,514	1	4,090	3	0	0	116
Mwanga	1,046	3	479	1	88	0	78	0
Same	1,727	3	363	1	132	0	0	0
Moshi Rural	5,254	3	3,309	2	413	0	553	0
Hai	3,185	3	2,002	2	221	0	196	0
Total	12,725	2	10,244	2	854	0	943	0

cont... HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Form Two		Form Three		Form Four		Form Five	
	Number	%	Number	%	Number	%	Number	%
	Rombo	1,025	1	116	0	7,587	6	0
Mwanga	722	2	111	0	2,296	6	0	0
Same	586	1	74	0	3,025	5	0	0
Moshi Rural	2,701	1	978	1	17,027	9	182	0
Hai	856	1	376	0	5,707	5	0	0
Total	5,891	1	1,656	0	35,642	7	182	0

cont... HOUSEHOLDS DEMOGRAPHYS: Number of Agricultural Household Members By Level of Formal Education Completion and District, 2002/03 Agricultural Year

District	Form Six		Training After Secondary Education		University & Other Tertiary Education		Adult Education		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
	Rombo	1,177	1	935	1	350	0	942	1	135,054
Mwanga	214	1	347	1	199	0	516	1	40,961	100
Same	74	0	362	1	0	0	143	0	66,715	100
Moshi Rural	2,927	2	2,962	2	1,618	1	916	0	187,488	100
Hai	123	0	1,218	1	348	0	500	0	105,853	100
Total	4,515	1	5,824	1	2,515	0	3,017	1	536,070	100

LAND ACCESS/OWNERSHIP

4.1 LAND ACCESS/OWNERSHIP: Number of Agricultural Households By Type of Land Ownership/Tenure and District, 2002/03 Agricultural Year

District	Land Access														Total Number of Households
	Households with Area Leased/Certificate of Ownership		Households with Area Owned Under Customary Law		Households with Area Bought From Others		Households with Area Rented From Others		Households with Area Borrowed From Others		Households with Area Shared Cropped From Others		Households with Area under Other Forms of Tenure		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	455	1	45,064	96	6,068	13	7,935	17	8,802	19	812	2	1,879	4	47,014
Mwanga	834	5	14,807	88	1,591	9	1,189	7	3,767	22	307	2	476	3	16,749
Same	5,343	18	23,619	81	7,611	26	2,798	10	6,643	23	587	2	1,756	6	29,103
Moshi Rural	4,348	6	65,742	86	9,679	13	14,425	19	6,855	9	3,834	5	4,533	6	76,826
Hai	1,300	3	38,618	83	11,136	24	12,980	28	3,694	8	3,179	7	6,077	13	46,481
Total	12,280	6	187,850	87	36,085	17	39,327	18	29,761	14	8,718	4	14,722	7	216,173

4.2 LAND ACCESS/OWNERSHIP: Area of Land by type of Ownership/Tenure (Hectare) and District, 2002/03 Agricultural Year

District	Land Access/ Ownership (Hectare)								Total
	Area Leased/Certificate of Ownership	Area Owned Under Customary Law	Area Bought From Others	Area Rented From Others	Area Borrowed From Others	Area Shared Cropped From Others	Area under Other Forms of Tenure		
Rombo	138	31,119	4,179	3,777	3,223	339	495	43,271	
Mwanga	857	17,309	1,112	561	1,827	93	489	22,248	
Same	6,386	26,730	6,041	1,251	3,618	171	897	45,093	
Moshi Rural	2,976	49,759	8,786	5,533	2,663	1,692	2,303	73,711	
Hai	2,969	64,352	11,182	7,122	1,315	2,582	2,431	91,953	
Total	13,326	189,269	31,300	18,244	12,646	4,876	6,615	276,276	

LAND USE

5.2 LAND USE: Number of Agricultural Households By Type of Land Use and District, 2002/03 Agricultural Year

District	Type of Land Use												Total Number of Households
	Households with Area under Temporary Mono Crops	Households with Area under Temporary Mixed Crops	Households with Area under Permanent Mono Crops	Households with Area under Permanent Mixed Crops	Households with Area under Permanent / Annual Mix	Households with Area under Pasture	Households with Area under Fallow	Households with Area under Natural Bush	Households with Area under Planted Trees	Households with Area Rented to Others	Households with Area Unusable	Households with Area of Uncultivated Usable Land	
Rombo	4,160	27,385	586	19,286	23,640	8,139	825	115	18,455	1,060	354	471	47,014
Mwanga	8,879	9,279	3,470	6,558	1,788	1,640	1,647	261	6,178	329	426	2,908	16,749
Same	16,547	18,584	6,283	8,728	10,117	1,843	5,941	518	6,290	1,470	1,372	4,522	29,103
Moshi Rural	23,783	33,240	6,014	43,596	8,787	1,721	1,713	0	22,231	1,633	687	2,339	76,826
Hai	14,050	30,751	3,104	25,295	5,832	1,320	1,820	250	13,851	1,529	8,376	1,740	46,481
Total	67,419	119,239	19,457	103,463	50,164	14,662	11,946	1,144	67,004	6,021	11,214	11,980	216,173

5.1 LAND USE: Area of Land by type of Land Use and District during 2002/03 Agricultural Year

District	Land Use Area												Total
	Area under Temporary Mono Crops	Area under Temporary Mixed Crops	Area under Permanent Mono Crops	Area under Permanent Mixed Crops	Area under Permanent / Annual Mix	Area under Pasture	Area under Fallow	Area under Natural Bush	Area under Planted Trees	Area Rented to Others	Area Unusable	Area of Uncultivated Usable Land	
Rombo	2,588	14,256	105	8,801	12,589	2,394	356	2	1,043	758	179	205	43,275
Mwanga	6,349	5,001	1,148	3,128	963	466	876	92	975	308	477	2,510	22,293
Same	12,431	12,246	1,967	3,839	5,482	519	3,292	225	1,031	831	593	2,638	45,093
Moshi Rural	18,088	15,907	2,995	23,484	3,784	435	1,894		3,571	1,644	334	1,576	73,711
Hai	9,843	21,229	894	12,997	3,850	14,265	21,456	38	3,240	1,266	1,305	1,570	91,953
Total	49,298	68,639	7,108	52,249	26,668	18,080	27,873	357	9,859	4,807	2,888	8,499	276,325
%	18	25	3	19	10	7	10	0	4	2	1	3	100

5.3 LAND SUFFICIENCY: Number of Agricultural Households by Whether All Land Available to the Household Was Used and District, 2002/03 Agricultural Year

District	Was all Land Available to the Hh Used During 2002/03?				
	Yes		No		Total
	Number	Percent	Number	Percent	Number
Rombo	42,672	91	4,342	9	47,014
Mwanga	11,000	67	5,482	33	16,482
Same	17,702	62	10,921	38	28,623
Moshi Rural	71,162	93	5,404	7	76,566
Hai	41,354	91	4,147	9	45,501
Total	183,891	86	30,296	14	214,187

5.4 LAND SUFFICIENCY: Number of Agricultural Households by Whether they Consider Having Sufficient Land for the Household and District, 2002/03 Agricultural Year

District	Do you Consider that you have sufficient land for the Hh?				
	Yes		No		Total
	Number	Percent	Number	Percent	Number
Rombo	13,130	28	33,884	72	47,014
Mwanga	8,700	53	7,782	47	16,482
Same	13,571	47	15,052	53	28,623
Moshi Rural	23,377	31	53,189	69	76,566
Hai	7,153	16	38,348	84	45,501
Total	65,932	31	148,255	69	214,187

5.5 LAND SUFFICIENCY: Number of Agricultural Households by whether Female Members of the Household Own or Have Customary Right to Land and District, 2002/03 Agricultural Year

District	Do any Female Members of the Hh own or have customary right					
	Yes		No		Total	
	Number	Percent	Number	Percent	Number	Percent
Rombo	5,332	11	41,682	89	47,014	100
Mwanga	2,011	12	14,472	88	16,482	100
Same	4,221	15	24,402	85	28,623	100
Moshi Rural	10,619	14	65,947	86	76,566	100
Hai	8,292	18	37,210	82	45,501	100
Total	30,474	14	183,713	86	214,187	100

**TOTAL ANNUAL CROP AND VEGETATION PRODUCTION –
LONG AND SHORT RAINY SEASON**

7.1 & 7.2a: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area (ha) by season and District

District	Short Rainy Season		Long Rainy Season		Total Area Planted (hectare)	% Area planted in Short Rainy season
	Number of Households	Planted Area	Number of Households	Planted Area		
	Rombo	110,954	26,804	75,882		
Mwanga	26,169	8,139	26,762	8,822	16,960	48
Same	54,231	21,782	33,624	15,410	37,192	59
Moshi Rural	32,733	6,662	98,542	31,902	38,564	17
Hai	19,606	5,873	80,968	30,220	36,093	16
Total	243,693	69,259	315,777	104,994	174,253	40

7.1 & 7.2b ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households Planting Crops By Season and District

District	Short Rainy Season		Long Rainy Season		Total Number of Crop Growing Households
	Households Growing Crops	Households NOT Growing Crops	Number of Households Growing Crops	Number of Households NOT Growing Crops	
	Rombo	43,266	3,748	34,155	
Mwanga	13,492	3,257	13,806	2,943	27,298
Same	25,777	3,326	20,161	8,941	45,938
Moshi Rural	20,544	56,281	53,763	23,063	74,307
Hai	12,926	33,555	41,225	5,256	54,151
Total	116,006	100,167	163,110	53,063	279,115

Table 7.1 & 7.2c: TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Area Planted (ha) and Quantity Harvested by Season and Crop for the 2002/03 Agricultural Year

Crop	Short Rainy Season			Long Rainy Season			Total		
	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)	Area Planted (ha)	Quantity Harvested (tons)	Yield (kg/ha)
CEREALS	39,973	38,062	952	63,594	79,128	1,244	103,567	117,190	1,132
Maize	38,275	33,360	872	58,318	71,861	1,232	96,593	105,222	1,089
Paddy	1,443	4,586	3,177	1,585	6,138	3,871	3,029	10,724	3,541
Sorghum	116	78	667	137	69	502	253	146	578
Finger Millet	139	38	273	3,553	1,060	298	3,692	1,098	297
ROOTS & TUBERS	3,940	10,654	2,704	5,545	10,385	1,873	9,485	21,040	2,218
Cassava	820	652	794	3,290	1,977	601	4,111	2,628	639
Sweet Potatoes	605	960	1,586	280	322	1,150	886	1,283	1,448
Irish Potatoes	1,618	8,334	5,151	1,398	7,257	5,193	3,016	15,592	5,170
Yams	237	172	728	90	244	2,704	327	417	1,274
Cocoyam	659	536	813	486	584	1,202	1,145	1,120	978
PULSESES	18,361	7,415	404	28,590	11,183	391	46,950	18,598	396
Mung Beans	13	2	148	233	99	426	247	101	410
Beans	17,221	6,918	402	27,062	10,704	396	44,284	17,622	398
Cowpeas	814	325	398	1,004	237	236	1,819	561	309
Green Gram	308	169	549	260	92	352	568	261	459
Field Peas	4	2	494	30	51	1,729	33	53	1,598
OIL SEEDS & OIL NUTS	4,442	1,973	444	5,358	3,306	617	9,800	5,279	539
Sunflower	2,955	1,445	489	3,338	2,279	683	6,293	3,724	592
Simsim	14	0	0	80	19	239	94	19	204
Groundnuts	1,474	528	358	1,939	1,008	520	3,413	1,536	450
FRUITS & VEGETABLES	2,543	12,466	4,902	1,887	10,743	5,695	4,430	23,209	5,239
Okra	14	57	4,150						
Bitter Aubergine				4	2	570	4	2	570
Onions	206	1,255	6,078	138	1,496	10,879	344	2,751	7,997
Ginger	464	1,453	3,134	4	0	99	468	1,453	3,105
Cabbage	91	445	4,861	326	980	3,011	417	1,425	3,417
Tomatoes	882	5,971	6,771	481	5,250	10,926	1,362	11,220	8,237
Spinnach	127	154	1,216	156	327	2,100	283	481	1,703
Carrot	220	1,148	5,226	163	1,127	6,896	383	2,275	5,938
Chillies	144	431	3,000	208	750	3,609	351	1,181	3,360
Amaranths	265	1,131	4,265	215	450	2,089	480	1,581	3,290
Pumpkins	23	10	450	5	0	69	28	11	384
Cucumber	39	228	5,872	41	212	5,211	79	440	5,534
Egg Plant	18	83	4,509						
Water Mellon	50	100	1,997	96	129	1,342	146	229	1,566
Cauliflower				51	19	371	51	19	371
CASH CROPS				22	13	599	22	13	599
Tobacco				22	13	599	22	13	599
Total	69,259	70,570		104,994	114,759		174,253	185,328	

Table 7.1 & 7.2d: TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Area Planted (ha) and Quantity Harvested by Season and Crop for the 2002/03 Agricultural Year

Crop	Short Rainy Season		Long Rainy Season		Total Area Planted Short & Long seasons	% Area Planted in Short Rainy Season
	Number of Households	Area Planted (ha)	Number of Households	Area Planted (ha)		
CEREALS	105,257	39,973	144,341	63,594	103,567	38.6
Maize	99,941	38,275	128,816	58,318	96,593	39.6
Paddy	3,698	1,443	3,164	1,585	3,029	47.7
Sorghum	689	116	714	137	253	45.9
Finger Millet	929	139	11,647	3,553	3,692	3.8
ROOTS & TUBERS	19,180	3,940	18,514	5,545	9,485	41.5
Cassava	4,506	820	8,028	3,290	4,111	20.0
Sweet Potatoes	3,772	605	2,042	280	886	68.3
Irish Potatoes	4,484	1,618	2,823	1,398	3,016	53.7
Yams	1,568	237	1,317	90	327	72.4
Cocoyam	4,850	659	4,304	486	1,145	57.6
PULSES	81,251	18,361			18,361	100.0
Mung Beans	67	13	603	233	247	5.5
Beans	73,082	17,221	103,410	27,062	44,284	38.9
Cowpeas	5,884	814	6,068	1,004	1,819	44.8
Green Gram	2,175	308	1,777	260	568	54.2
Field Peas	43	4	73	30	33	10.6
OIL SEEDS & OIL NUTS	22,765	4,442	27,726	5,358	9,800	45.3
Sunflower	15,250	2,955	20,235	3,338	6,293	47.0
Simsim	136	14	396	80	94	14.7
Groundnuts	7,379	1,474	7,096	1,939	3,413	43.2
FRUITS & VEGETABLES	15,241	2,543	13,029	1,887	4,430	57.4
Okra	136	14	0			
Bitter Aubergine	0		73	4	4	0.0
Onions	1,415	206	383	138	344	60.0
Ginger	1,286	464	43	4	468	99.1
Cabbage	808	91	2,645	326	417	21.9
Tomatoes	5,012	882	2,989	481	1,362	64.7
Spinnach	1,118	127	1,872	156	283	44.9
Carrot	688	220	441	163	383	57.3
Chillies	982	144	867	208	351	40.9
Amaranths	2,849	265	2,806	215	480	55.2
Pumpkins	145	23	67	5	28	82.7
Cucumber	485	39	447	41	79	48.8
Egg Plant	182	18	0			
Water Mellon	135	50	271	96	146	34.2
Cauliflower	0		125	51		
CASH CROPS	0	0	236	22	22	0.0
Tobacco	0		236	22	22	
Total		69,259		104,994	174,253	40

7.1 & 7.2h TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Agriculture Households and Planted Area By Insecticide Use and District for the 2002/03 agricultural year - Long & Short Rainy Seasons - Kilimanjaro region.

District	Insecticide Use						% of Planted Area using Insecticide
	Insecticide Use		Insecticide Use		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	12,731	8,254	20,931	14,020	12,731	22,274	49
Mwanga	2,263	1,530	2,035	1,147	2,263	2,677	16
Same	3,679	3,233	5,431	5,294	3,679	8,527	23
Moshi Rural	6,608	5,500	2,102	741	6,608	6,242	16
Hai	7,762	7,372	3,892	1,959	7,762	9,331	26
Total	33,043	25,889	34,391	23,162	33,043	49,051	28

7.1 & 7.2i TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Agriculture Households and Planted Area By Insecticide Use and District for the 2002/03 agricultural year - Long & Short Rainy Seasons- Kilimanjaro region.

District	Herbicide Use						% of Planted Area using Insecticide
	Insecticide Use		Insecticide Use		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	118	119	1,423	1,487	118	1,606	4
Mwanga	127	51	174	128	127	179	1
Same	209	188	507	469	209	657	2
Moshi Rural	2,901	2,347	389	113	2,901	2,460	6
Hai	1,702	2,169	1,771	974	1,702	3,143	9
Total	5,057	4,874	4,264	3,171	5,057	8,045	5

7.1 & 7.2e TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Total number of agriculture Households and Planted Area (ha) By Means of Soil Preparation and District - Longt & Short Rainy Seasons - Kilimanjaro Region.

District	Soil Preparation							
	Mostly Tractor Ploughing		Mostly Oxen Ploughing		Mostly Hand Cultivation		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Rombo	706	971	1,038	425	32,411	16,264	32,411	45,444
Mwanga	1,114	858	1,056	614	11,636	7,168	11,636	16,960
Same	1,037	742	1,213	845	17,912	12,027	17,912	37,192
Moshi Rural	23,632	19,497	3,765	2,066	26,366	10,339	26,366	38,564
Hai	20,823	13,756	7,717	8,818	12,686	7,645	12,686	36,093
Total	47,312	35,824	14,788	12,769	101,010	53,443	101,010	174,253

7.1 & 7.2f TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Total number of agriculture Households and Planted Area (ha) By Fertiliser Use and District for 2002/03 agricultural year Long & Short Rainy Season - Kilimanjaro Region.

District	Fertilisers Use								Total Planted Area
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	
Rombo	11,961	23,394	1,096	1,294	1,514	4,891	19,584	10,218	18,640
Mwanga	4,599	5,542	163	226	685	895	8,358	5,744	8,822
Same	3,901	13,136	4,199	5,378	1,404	2,621	12,265	7,849	15,410
Moshi Rural	12,666	11,226	855	453	20,485	12,812	19,756	12,883	31,902
Hai	6,004	6,043	364	227	16,275	12,864	18,582	14,949	30,220
Total	39,131	59,341	6,679	7,579	40,363	34,082	78,545	51,644	104,994

7.1 & 7.2g TOTAL ANNUAL CROP AND VEGETABLE PRODUCTION: Total number of agriculture Households and Planted Area (ha) By Irrigation Use and District for 2002/03 agricultural year Long & Short Rainy season - Kilimanjaro Region.

District	Irrigation Use						% of Planted Area using Irrigation
	Household Using Irrigation		Household NOT Using Irrigation		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	940	1,033	940	44,411	940	18,640	5
Mwanga	2,974	3,280	2,974	13,680	2,974	8,822	34
Same	9,190	13,626	9,190	23,566	9,190	15,410	60
Moshi Rural	8,393	7,838	8,393	30,726	8,393	31,902	26
Hai	3,368	4,856	3,368	31,237	3,368	30,220	11
Total	24,864	30,633	24,864	143,620	24,864	104,994	24

7.1 § 7.2j: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Fungicide Use and District During 2002/03 Crop Year LONG SEASON

District	Fungicide Use						% of area planted using Fungicides
	Households Using Fungicide		Households Not Using Fungicide		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	543	213	33,612	18,427	34,155	18,640	1
Mwanga	684	479	13,121	8,342	13,806	8,822	5
Same	721	451	21,048	14,959	21,769	15,410	3
Moshi Rural	2,148	1,880	51,615	30,023	53,763	31,902	6
Hai	4,454	3,962	36,771	26,258	41,225	30,220	13
Total	8,551	6,985	156,167	98,010	164,718	104,994	7

7.1&7.2k: ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Improved Seed Use and District During 2002/03 Crop Year - LONG & SHORT Rainy Seasons

District	Improved Seed Use						% of area planted using Improved Seeds
	Households Using Improved Seed		Households Not Using Improved Seed		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	12,071	25,173	22,084	25,173	34,155	45,444	55
Mwanga	5,329	7,333	8,477	7,333	13,806	16,960	43
Same	7,719	15,440	12,442	15,440	21,769	37,192	42
Moshi Rural	37,207	27,475	16,555	27,475	53,763	38,564	71
Hai	27,301	22,778	13,924	22,778	41,225	36,093	63
Total	89,627	98,198	73,483	98,198	164,718	174,253	56

ANNUAL CROP AND VEGE PRODUCTION- LONG RAINY SEASON

7.1a ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Households and Planted Area (ha) By Means Used for Soil Preparation and District During 2002/03 Crop Year-Short Rainy Season, Kilimanjaro Region

District	Soil Preparation							
	Mostly Tractor Ploughing		Mostly Oxen Ploughing		Mostly Hand Cultivation		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Rombo	584	977	1,393	860	41,289	24,967	43,266	26,804
Mwanga	232	140	764	545	12,496	7,453	13,492	8,139
Same	566	430	364	389	24,847	20,963	25,777	21,782
Moshi Rural	1,685	639	2,403	684	16,456	5,339	20,544	6,662
Hai	796	471	2,158	1,120	9,973	4,282	12,926	5,873
Total	3,863	2,657	7,082	3,598	105,061	63,004	116,006	69,259

7.1b ANNUAL CROP AND VEGETABLE PRODUCTION: Total number of agriculture Households and Planted Area (ha) By Fertiliser Use and District - SHORT SEASON, Kilimanjaro Region.

District	Fertilisers Use									
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied			Total
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Rombo	28,672	16,715	545	701	4,317	3,741	9,732	5,646	43,266	26,804
Mwanga	5,743	3,103	283	137	399	345	7,068	4,553	13,492	8,139
Same	10,459	9,943	2,195	1,813	2,180	1,819	10,943	8,208	25,777	21,782
Moshi Rural	10,099	3,063	477	165	5,795	2,244	4,173	1,190	20,544	6,662
Hai	4,614	1,890	73	59	3,840	1,913	4,399	2,011	12,926	5,873
Total	59,587	34,715	3,573	2,875	16,530	10,061	36,315	21,608	116,006	69,259

7.1c ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Irrigation Use and District, SHORT SEASON, Kilimanjaro Region.

District	Irrigation Use						% of Planted Area using Irrigation
	Household Using Irrigation		Household NOT Using Irrigation		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	235	81	43,031	26,723	43,266	26,804	0.3
Mwanga	1,925	1,111	11,567	7,027	13,492	8,139	13.7
Same	7,789	6,783	17,988	14,999	25,777	21,782	31.1
Moshi Rural	4,651	1,487	15,893	5,175	20,544	6,662	22.3
Hai	4,001	1,641	8,925	4,232	12,926	5,873	27.9
Total	18,602	11,103	97,404	58,156	116,006	69,259	16.0

7.1d ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Pesticide Use and District, SHORT RAINY SEASON, Kilimanjaro Region.

District	Insecticide Use					
	Household Using Insecticides		Household NOT Using Insecticides		Total	
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area
Rombo	20,931	14,020	22,335	12,783	43,266	26,804
Mwanga	2,035	1,147	11,457	6,992	13,492	8,139
Same	5,431	5,294	20,346	16,488	25,777	21,782
Moshi Rural	2,102	741	18,442	5,921	20,544	6,662
Hai	3,892	1,959	9,034	3,914	12,926	5,873
Total	34,391	23,162	81,614	46,097	116,006	69,259

7.1e ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Herbicide Use and District, SHORT SEASON, Kilimanjaro Region

District	Herbicide Use						% Planted Area using Herbicide
	Household Using Irrigation		Household NOT Using Irrigation		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	1,423	1,487	41,843	25,317	43,266	26,804	6
Mwanga	174	128	13,318	8,011	13,492	8,139	2
Same	507	469	25,270	21,313	25,777	21,782	2
Moshi Rural	389	113	20,155	6,549	20,544	6,662	2
Hai	1,771	974	11,155	4,899	12,926	5,873	17
Total	4,264	3,171	111,741	66,088	116,006	69,259	5

7.1f ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Fungicide Use and District SHORT RAINY SEASON, Kilimanjaro Region.

District	Fungicide Use						% Planted Area using Fungicides
	Household Using Fungicides		Household NOT Using Fungicides		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	926	687	42,341	26,117	43,266	26,804	3
Mwanga	206	93	13,286	8,046	13,492	8,139	1
Same	1,319	1,661	24,458	20,120	25,777	21,782	8
Moshi Rural	836	211	19,708	6,451	20,544	6,662	3
Hai	2,848	1,743	10,078	4,130	12,926	5,873	30
Total	6,135	4,394	109,871	64,865	116,006	69,259	6

7.1g ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Improved Seed Use and District, SHORT RAINY SEASON, Kilimanjaro Region

District	Improved Seed Use						% Planted Area using Improved Seeds
	Household Using Improved Seeds		Household NOT Using Improved Seeds		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	26,787	17,608	16,479	9,196	43,266	26,804	66
Mwanga	5,998	4,015	7,494	4,124	13,492	8,139	49
Same	9,365	8,820	16,412	12,962	25,777	21,782	40
Moshi Rural	12,725	4,793	7,819	1,869	20,544	6,662	72
Hai	6,333	2,450	6,593	3,423	12,926	5,873	42
Total	61,210	37,685	54,796	31,574	116,006	69,259	54

7.2a ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area (ha) By Means Used for Soil Preparation and District, LONG RAINY SEASON, Kilimanjaro Region

District	Soil Preparation							
	Mostly Tractor Ploughing		Mostly Oxen Ploughing		Mostly Hand Cultivation		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area
Rombo	706	971	1,038	425	32,411	16,264	34,155	17,659
Mwanga	1,114	858	1,056	614	11,636	7,168	13,806	8,639
Same	1,037	742	1,213	845	17,912	12,027	20,161	13,615
Moshi Rural	23,632	19,497	3,765	2,066	26,366	10,339	53,763	31,902
Hai	20,823	13,756	7,717	8,818	12,686	7,645	41,225	30,220
Total	47,312	35,824	14,788	12,769	101,010	53,443	163,110	102,036
%	29	35	9	13	62	52	163,110	100

7.2b ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Fertilizer Use and District LONG RAINY SEASON, Kilimanjaro Region

District	Fertilisers Use									
	Mostly Farm Yard Manure		Mostly Compost		Mostly Inorganic Fertilizer		No Fertilizer Applied		Total	
	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Planted Area	Number of Households	Total Planted Area
Rombo	11,961	6,679	1,096	593	1,514	1,150	19,584	10,218	34,155	18,640
Mwanga	4,599	2,439	163	89	685	550	8,358	5,744	13,806	8,822
Same	3,901	3,194	4,199	3,565	1,404	802	12,265	7,849	21,769	15,410
Moshi Rural	12,666	8,163	855	288	20,485	10,568	19,756	12,883	53,763	31,902
Hai	6,004	4,152	364	168	16,275	10,951	18,582	14,949	41,225	30,220
Total	39,131	24,626	6,679	4,703	40,363	24,021	78,545	51,644	164,718	104,994

7.2c ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Irrigation Use and District During LONG RAINY SEASON

District	Irrigation Use						% of Area Planted Under Irrigation in Long Rainy Season
	Households Using Irrigation		Households Not Using Irrigation		Total		
	No. of H/holds	Planted Area	No. of H/holds	Planted Area	No. of H/holds	Planted Area	
Rombo	940	952	33,215	17,688	34,155	18,640	5
Mwanga	2,974	2,169	10,832	6,653	13,806	8,822	25
Same	9,190	6,843	12,579	8,567	21,769	15,410	44
Moshi Rural	8,393	6,352	45,370	25,551	53,763	31,902	20
Hai	3,368	3,215	37,857	27,005	41,225	30,220	11
Total	24,864	19,530	139,854	85,464	164,718	104,994	19
%	15	19	85	81	100	100	19

7.2d ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Insecticide Use and District LONG RAINY SEASON, Kilimanjaro Region

District	Insecticide Use					
	Households Using Pesticide		Households Not Using Pesticide		Total	
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area
Rombo	12,731	8,254	21,424	10,387	34,155	18,640
Mwanga	2,263	1,530	11,543	7,291	13,806	8,822
Same	3,679	3,233	18,090	12,177	21,769	15,410
Moshi Rural	6,608	5,500	47,155	26,402	53,763	31,902
Hai	7,762	7,372	33,463	22,848	41,225	30,220
Total	33,043	25,889	131,675	79,105	164,718	104,994

7.2e ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Herbicide Use and District LONG RAINY SEASON, Kilimanjaro Region.

District	Herbicide Use						% of Area Planted Using Herbicide
	Households Using Herbicide		Households Not Using Herbicide		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	118	119	34,037	18,521	34,155	18,640	1
Mwanga	127	51	13,679	8,771	13,806	8,822	1
Same	209	188	21,561	15,222	21,769	15,410	1
Moshi Rural	2,901	2,347	50,861	29,555	53,763	31,902	7
Hai	1,702	2,169	39,523	28,051	41,225	30,220	7
Total	5,057	4,874	159,661	100,120	164,718	104,994	5

7.2j Number of Crop Producing Households Reporting Selling Agricultural Products by District, 2002/03

District	Households that Sold Produce		Households that Did not Sold Produce		Total Number of Households
	Number	%	Number	%	
Rombo	41,831	89	5,183	11	47,014
Mwanga	10,443	62	6,306	38	16,749
Same	18,721	64	10,382	36	29,103
Moshi Rural	64,370	84	12,456	16	76,826
Hai	32,344	70	14,137	30	46,481
Total	167,709	78	48,464	22	216,173

7.2f ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Fungicide Use and District 2002/03 LONG RAINY SEASON, Kilimanjaro Region

District	Fungicide Use						% of Planted Area Using Fungicide
	Households Using Fungicide		Households Not Using Fungicide		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	543	213	33,612	18,427	34,155	18,640	1
Mwanga	684	479	13,121	8,342	13,806	8,822	5
Same	721	451	21,048	14,959	21,769	15,410	3
Moshi Rural	2,148	1,880	51,615	30,023	53,763	31,902	6
Hai	4,454	3,962	36,771	26,258	41,225	30,220	13
Total	8,551	6,985	156,167	98,010	164,718	104,994	7

7.2g ANNUAL CROP AND VEGETABLE PRODUCTION: Number of Crop Growing Households and Planted Area By Improved Seed Use and District, LONG RAINY SEASON, Kilimanjaro Region

District	Improved Seed Use						% of Planted Area Using Improved Seed
	Households Using Improved Seed		Households Not Using Improved Seed		Total		
	Number of Household	Planted Area	Number of Household	Planted Area	Number of Household	Planted Area	
Rombo	12,071	7,565	22,084	10,095	34,155	17,659	43
Mwanga	5,329	3,318	8,477	5,321	13,806	8,639	38
Same	7,719	6,621	12,442	6,994	20,161	13,615	49
Moshi Rural	37,207	22,682	16,555	9,220	53,763	31,902	71
Hai	27,301	20,327	13,924	9,893	41,225	30,220	67
Total	89,627	60,513	73,483	41,523	163,110	102,036	59
	55	59	45	41	100	100	59

**7.2h ANNUAL CROP & VEGETABLE PRODUCTION: Planted Area and Number of Crop Growing Households in LONG RAINY SEASON
During 2002/03 Crop Year By Method of Land Clearing By Crop**

District		Land Clearing											
		Mostly Bush Clearances		Mostly Hand Slashing		Tractor Slashing		Mostly Burning		No Land Clearing		Total	
		No of Households	Planted Area	No of Households	Planted Area	No of Households	Planted Area	No of Households	Planted Area	No of Households	Planted Area	No of Households	Planted Area
	Finger Millet	0	.	123	12	0	.	0	.	136	28	259	40
	CEREALS	4,716	2,340	34,449	17,472	2,208	803	0	.	12,593	3,167	53,966	23,781
	Cassava	0	.	139	28	0	.	0	.	0	.	139	28
	Sweet Potatoes	0	.	0	.	0	.	0	.	133	2	133	2
	Irish Potatoes	0	.	0	.	0	.	0	.	398	12	398	12
	Yams	0	.	131	1	0	.	0	.	0	.	131	1
	Cocoyam	0	.	804	56	0	.	0	.	1,066	94	1,870	151
	ROOTS & TUBERS	0	.	1,074	85	0	.	0	.	1,596	108	2,670	193
	Beans	1,308	348	16,545	3,684	764	74	0	.	6,863	907	25,480	5,014
	Cowpeas	0	.	0	.	134	27	0	.	0	.	134	27
	PULSES	1,308	348	16,545	3,684	898	101	0	.	6,863	907	25,614	5,041
	Sunflower	0	.	3,464	623	227	15	138	28	2,210	352	6,039	1,018
	Simsim	0	.	278	56	0	.	0	.	0	.	278	56
	Groundnuts	329	67	975	407	0	.	0	.	115	47	1,419	520
	OIL SEEDS & OIL NUTS	329	67	4,716	1,087	227	15	138	28	2,326	398	7,736	1,595
	Cabbage	0	.	689	117	0	.	0	.	1,081	95	1,769	212
	Tomatoes	0	.	631	130	0	.	0	.	133	1	764	130
	Spinnach	137	28	752	52	0	.	0	.	404	9	1,294	89
	Chillies	0	.	0	.	0	.	0	.	267	82	267	82
	Amaranths	136	33	1,078	90	0	.	0	.	399	8	1,613	131
	Pumpkins	0	.	67	5	0	.	0	.	0	.	67	5
	Cucumber	0	.	67	8	0	.	0	.	135	14	201	22
	Water Mellon	0	.	0	.	0	.	0	.	135	27	135	27
	FRUITS & VEGETABLES	273	61	3,283	402	0	.	0	.	2,553	235	6,109	698
	Total	6,627	2,815	60,067	22,730	3,333	920	138	28	25,931	4,816	96,096	31,309
Hai	Maize	2,005	1,306	22,408	9,374	1,955	1,631	335	374	11,413	6,433	38,115	19,118
	Paddy	0	.	576	212	0	.	0	.	120	63	697	275
	Sorghum	0	.	125	30	0	.	0	.	120	24	245	55
	Finger Millet	0	.	0	.	0	.	0	.	348	78	348	78
	CEREALS	2,005	1,306	23,109	9,616	1,955	1,631	335	374	12,002	6,599	39,405	19,527
	Cassava	0	.	368	51	0	.	0	.	243	30	611	81
	Sweet Potatoes	0	.	0	.	0	.	0	.	125	10	125	10
	Irish Potatoes	76	31	1,411	1,181	0	.	0	.	0	.	1,487	1,212
	Yams	0	.	125	10	0	.	0	.	0	.	125	10
	ROOTS & TUBERS	76	31	1,904	1,242	0	.	0	.	368	40	2,348	1,313
	Beans	1,720	543	18,387	3,668	1,838	636	96	10	7,127	2,314	29,167	7,170
	Cowpeas	0	.	0	.	0	.	0	.	119	72	119	72
	Field Peas	0	.	73	30	0	.	0	.	0	.	73	30
	PULSES	1,720	543	18,460	3,697	1,838	636	96	10	7,246	2,386	29,359	7,272
	Sunflower	107	11	3,025	476	232	94	0	.	863	150	4,227	731
	Groundnuts	118	24	438	83	0	.	0	.	583	376	1,139	483
	OIL SEEDS & OIL NUTS	225	35	3,463	559	232	94	0	.	1,447	525	5,367	1,213
	Onions	0	.	120	29	0	.	0	.	120	73	241	102
	Cabbage	0	.	126	25	0	.	0	.	0	.	126	25
	Tomatoes	0	.	615	140	0	.	0	.	844	103	1,458	243
	Spinnach	0	.	96	19	0	.	0	.	238	20	333	39
	Carrot	0	.	367	156	0	.	0	.	0	.	367	156
	Chillies	0	.	344	59	0	.	0	.	0	.	344	59
	Amaranths	0	.	375	48	0	.	0	.	351	13	725	61
	Cucumber	0	.	125	13	0	.	0	.	120	6	245	19
	Cauliflower	0	.	125	51	0	.	0	.	0	.	125	51
	FRUITS & VEGETABLES	0	.	2,292	541	0	.	0	.	1,673	216	3,965	756
	Tobacco	0	.	118	10	0	.	0	.	119	12	236	22
	CASH CROPS	0	.	118	10	0	.	0	.	119	12	236	22
	Total	4,026	1,914	49,346	15,666	4,025	2,361	430	384	22,853	9,778	80,680	30,103

ANNUAL CROP AND VEGETABLE PRODUCTION

7.2.1 Number of Crop Growing Households, Planted Area (ha) and Maize Harvested (tons) by season and District 2002/03											
District	Maize										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	42,682	14,125	13,407	0.9	14,683	3,681	2,409	0.7	17,806	15,817	0.9
Mwanga	12,311	5,292	4,199	0.8	11,993	5,410	3,959	0.7	10,702	8,158	0.8
Same	24,426	13,137	9,829	0.7	11,796	7,314	6,312	0.9	20,451	16,141	0.8
Moshi Rural	14,701	3,519	4,310	1.2	52,133	22,756	35,190	1.5	26,275	39,499	1.5
Hai	5,820	2,202	1,615	0.7	38,211	19,157	23,992	1.3	21,360	25,606	1.2
Total	99,941	38,275	33,360	0.9	128,816	58,318	71,861	1.2	96,593	105,222	1.1

7.2.2 Number of Crop Growing Households, Planted Area (ha) and Paddy Harvested (tons) by season and District 2002/03

District	Paddy										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0				0						
Mwanga	151	35	97	2.8	118	36	14	0.4	71	111	1.6
Same	2,828	1,141	3,601	3.2	68	28	196	7.1	1,169	3,797	3.2
Moshi Rural	527	240	807	3.4	2,281	1,246	5,535	4.4	1,486	6,341	4.3
Hai	192	27	81	3.0	697	275	393	1.4	303	474	1.6
Total	3,698	1,443	4,586	3.2	3,164	1,585	6,138	3.9	3,029	10,724	3.5

7.2.3 Number of Crop Growing Households, Planted Area (ha) and Sorghum Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Sorghum										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	438	50	31	0.6	236	48	7	0	98	39	0.4
Mwanga	43	9	0	0.0	43	9	9	1	17	9	0.5
Same	208	58	46	0.8	0				58	46	0.8
Moshi Rural	0				190	26	29	1	26	29	1.1
Hai	0				245	55	25	0	55	25	0.5
Total	689	116	78	0.7	714	137	69	1	253	146	0.6

7.2.4 Number of Crop Growing Households, Planted Area (ha) and Finger millet Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Finger millet										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	818	128	38	0	11,040	3,435	980	0.3	3,563	1,018	0
Mwanga	0	0	0	0	0	0	0	0.0	0	0	0
Same	0	0	0	0	0	0	0	0.0	0	0	0
Moshi Rural	259	0	0	0	259	40	19	0.5	40	19	0
Hai	111	11	0	0	348	78	62	0.8	90	62	1
Total	929	139	38	0	11,647	3,553	1,060	0	3,692	1,098	0

7.2.7 Number of Crop Growing Households, Planted Area (ha) and Cassava Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Cassava										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	2,088	152	37	0.2	1,998	1,117	164	0.1	1,269	201	0.2
Mwanga	733	164	67	0.4	605	225	85	0.4	389	152	0.4
Same	1,685	505	547	1.1	4,675	1,839	1,558	0.8	2,343	2,106	0.9
Moshi Rural	0	.	.	0.0	139	28	1	0.0	28	1	0.0
Hai	0	.	.	0.0	611	81	168	2.1	81	168	2.1
Total	4,506	820	652	0.8	8,028	3,290	1,977	0.6	81	168	2.1

7.2.8 Number of Crop Growing Households, Planted Area (ha) and Sweet Potatoes Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Sweet Potatoes										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	116	10	17	2	118	48	4	0	58	21	0
Mwanga	1,829	240	206	1	1,153	152	121	1	391	328	1
Same	1,827	355	736	2	513	69	161	2	424	897	2
Moshi Rural	0	.	.	.	133	2	7	3	2	7	3
Hai	0	.	.	.	125	10	30	3	10	30	3
Total	3,772	605	960	2	2,042	280	322	1	886	1,283	1

7.2.9 Number of Crop Growing Households, Planted Area (ha) and Irish Potatoes Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Irish Potatoes											
	Short Rainy Season				Long Rainy Season				Total			
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	
Rombo	530	124	288	2.3	427	140	115	0.8	265	403	1.5	
Mwanga	0	.	.	.	86	6	6	1.0	6	6	1.0	
Same	2,268	314	329	1.0	293	22	25	1.1	336	354	1.1	
Moshi Rural	0	.	.	.	531	17	65	3.8	17	65	3.8	
Hai	1,686	1,180	7,717	6.5	1,487	1,212	7,046	5.8	2,391	14,763	6.2	
Total	4,484	1,618	8,334	5.2	2,823	1,398	7,257	5.2	3,016	15,592	5.2	

7.2.10 Number of Crop Growing Households, Planted Area (ha) and Yams Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Yams											
	Short Rainy Season				Long Rainy Season				Total			
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	
Rombo	1,291	225	137	0.6	1,061	80	177	2.2	305	314	1.0	
Mwanga	0	.	.	.	0	
Same	146	11	28	2.5	0	.	.	.	11	28	2.5	
Moshi Rural	131	1	8	14.8	131	1	8	14.8	1	16	14.8	
Hai	0	.	.	.	125	10	60	5.9	10	60	6.0	
Total	1,568	237	172	0.7	1,317	90	244	2.7	327	417	1.3	

7.2.11 Number of Crop Growing Households, Planted Area (ha) and Coco Yams Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Coco Yams											
	Short Rainy Season				Long Rainy Season				Total			
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	
Rombo	3,752	517	377	1	1,766	257	297	1	774	674	1	
Mwanga	559	55	84	2	601	62	84	1	118	167	1	
Same	144	16	61	4	67	16	20	1	32	81	3	
Moshi Rural	395	71	14	0	1,870	151	184	1	222	198	1	
Hai	0	.	.	.	0	
Total	4,850	659	536	1	4,304	486	584	1	1,145	1,120	1	

7.2.12 Number of Crop Growing Households, Planted Area (ha) and Beans Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Beans											
	Short Rainy Season				Long Rainy Season				Total			
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	
Rombo	34,023	7,050	2,457	0.3	24,168	6,613	2,226	0.3	13,664	4,683	0.3	
Mwanga	8,384	2,022	871	0.4	9,465	2,430	1,160	0.5	4,452	2,031	0.5	
Same	16,014	5,196	1,742	0.3	14,136	5,633	2,034	0.4	10,829	3,776	0.3	
Moshi Rural	8,722	1,347	1,118	0.8	26,377	5,177	2,473	0.5	6,524	3,590	0.6	
Hai	5,939	1,605	730	0.5	29,263	7,209	2,811	0.4	8,815	3,541	0.4	
Total	73,082	17,221	6,918	0.4	103,410	27,062	10,704	0.4	44,284	17,622	0.4	

7.2.17 Number of Crop Growing Households, Planted Area (ha) and Sunflower Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Sunflower										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	11,468	2,131	982	0	9,717	1,482	815	1	3,612	1,798	0
Mwanga	0	.	.	.	0
Same	0	.	.	.	0
Moshi Rural	3,657	812	447	1	6,290	1,126	1,023	1	1,937	1,470	1
Hai	126	13	15	1	4,227	731	441	1	743	456	1
Total	15,250	2,955	1,445	0	20,235	3,338	2,279	1	6,293	3,724	1

7.2.18 Number of Crop Growing Households, Planted Area (ha) and Simsim Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Simsim										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	118	24	9	0	24	9	0
Mwanga	0	.	.	.	0
Same	0	.	.	.	0
Moshi Rural	136	14	0	.	278	56	10	0	70	10	0
Hai	0	.	.	.	0
Total	136	14	0	.	396	80	19	0	94	19	0

7.2.19 Number of Crop Growing Households, Planted Area (ha) and Simsim Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Groundnuts										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	7,056	1,427	511	0.4	4,228	833	301	0.4	2,260	812	0.4
Mwanga	43	9	1	0.1	214	65	58	0.9	74	59	0.8
Same	0	.	.	.	0
Moshi Rural	87	9	8	0.9	1,419	520	577	1.1	529	585	1.1
Hai	192	29	8	0.3	1,235	522	72	0.1	551	79	0.1
Total	7,379	1,474	528	0.4	7,096	1,939	1,008	0.5	3,413	1,536	0.5

7.2.21 Number of Crop Growing Households, Planted Area (ha) and Onions Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Onions										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	0
Mwanga	44	9	13	1.5	0	.	.	.	9	13	1.5
Same	952	134	648	4.8	142	35	417	11.9	170	1,064	6.3
Moshi Rural	67	16	7	0.4	0	.	.	.	16	648	39.9
Hai	352	47	587	12.5	241	102	1,079	10.5	149	1,667	11.2
Total	1,415	206	1,255	6.1	383	138	1,496	10.9	344	2,751	8.0

7.2.22 Number of Crop Growing Households, Planted Area (ha) and Cabbage Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Cabbage										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	118	2	5	2	2	5	2
Mwanga	130	18	127	7	205	37	134	4	55	261	5
Same	217	26	105	4	295	22	140	6	48	246	5
Moshi Rural	132	11	20	2	1,902	239	513	2	250	533	2
Hai	328	37	193	5	126	25	188	7	63	381	6
Total	808	91	445	5	2,645	326	980	3	417	1,425	3

7.2.23 Number of Crop Growing Households, Planted Area (ha) and Tomatoes Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Tomatoes										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	0
Mwanga	808	109	300	3	259	40	172	4	149	472	3
Same	1,378	241	1,678	7	509	66	416	6	308	2,094	7
Moshi Rural	1,026	271	1,181	4	764	130	1,633	13	402	2,814	7
Hai	1,799	260	2,811	11	1,458	243	3,029	12	504	5,840	12
Total	5,012	882	5,971	7	2,989	481	5,250	11	1,362	11,220	8

7.2.24 Number of Crop Growing Households, Planted Area (ha) and Spinach Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Spinach										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	0
Mwanga	171	24	9	0	173	25	11	0	49	20	0
Same	0	.	.	.	72	3	14	5	3	14	5
Moshi Rural	382	36	82	2	1,294	89	268	3	125	350	3
Hai	565	66	64	1	333	39	34	1	106	97	1
Total	1,118	127	154	1	1,872	156	327	2	283	481	2

7.2.25 Number of Crop Growing Households, Planted Area (ha) and Carrot Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Carrot										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	0
Mwanga	42	1	5	4.9	0	.	.	.	1	5	4.9
Same	0	.	.	.	74	7	7	1.0	7	7	1.0
Moshi Rural	132	11	9	0.9	0	.	.	.	11	9	0.9
Hai	514	208	1,134	5.5	367	156	1,120	7.2	364	2,254	6.2
Total	688	220	1,148	5.2	441	163	1,127	6.9	383	2,275	5.9

7.2.26 Number of Crop Growing Households, Planted Area (ha) and Amaranthas Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Amaranthas										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	118	2	2	1.0	2	2	1.0
Mwanga	302	34	45	1.3	214	16	33	2.0	50	78	1.6
Same	72	14	11	0.7	0	.	.	.	14	11	0.8
Moshi Rural	1,178	91	276	3.0	1,749	136	303	2.2	226	579	2.6
Hai	1,297	126	800	6.3	725	61	111	1.8	187	911	4.9
Total	2,849	265	1,131	4.3	2,806	215	450	2.1	480	1,581	3.3

7.2.27 Number of Crop Growing Households, Planted Area (ha) and Pumpkins Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Pumpkins										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.	.	0
Mwanga	0	.	.	.	0
Same	145	23	10	0.4	0	.	.	.	23	10	0.4
Moshi Rural	0	.	.	.	67	5	0	.	5	0	0.1
Hai	0	.	.	.	0
Total	145	23	10	0.4	67	5	0	.	28	11	0.4

7.2.28 Number of Crop Growing Households, Planted Area (ha) and Cotton Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Chillies										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0.0	.	.	.	0.0
Mwanga	43.8	2.1	11.0	5.1	43.2	4.4	0.9	0.2	6.5	11.8	1.8
Same	140.6	22.3	71.8	3.2	213.0	61.7	168.1	2.7	84.0	239.9	2.9
Moshi Rural	337.1	71.4	52.9	0.7	267.2	82.2	123.7	1.5	153.7	176.6	1.1
Hai	460.2	47.8	295.5	6.2	343.6	59.4	456.9	7.7	107.2	752.4	7.0
Total	981.7	143.7	431.1	3.0	866.9	207.7	749.6	3.6	351.4	1,180.8	3.4

7.2.29 Number of Crop Growing Households, Planted Area (ha) and Tobacco Harvested (tons) by season and District 2002/03 Agricultural Year.

District	Tobacco										
	Short Rainy Season				Long Rainy Season				Total		
	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	No. of H/holds	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)	Planted Area (ha)	Quantity Harvested (tons)	Yield (ton/ha)
Rombo	0	.	.		0	.	.				
Mwanga	0	.	.		0	.	.				
Same	0	.	.		0	.	.				
Moshi Rural	0	.	.		0	.	.				
Hai	0	.	.		236	22	13	0.6	22	13	0.6
Total	0	.	.		236	22	13	0.6	22	13	0.6

PERMANENT CROPS

7.3 Production of Permanent Crops by Crop Type and District, Kilimanjaro Region					
		Planted Area (ha)	Area Harvested (ha)	Quantity Harvested (tons)	Yield (Kgs/ha)
Rombo	Pigeon Pea	435	56	95	1,704
	Coffee	10,171	4,617	2,074	449
	Tea	5	5	5	1,112
	Cocoa	162	43	12	274
	Wattle	172	33	141	4,234
	Jack Fruit	10	.	.	.
	Banana	15,528	5,556	101,082	18,195
	Avocado	1,930	534	6,541	12,239
	Mango	1,969	2,436	7,587	3,115
	Pawpaw	453	173	701	4,042
	Pineapple	14	24	92	3,853
	Orange	158	19	280	14,664
	Grape Fruit	29	29	9	309
	Guava	1	0	76	.
	Lime/Lemon	46	0	19	.
Total	31,083	13,525	118,715	8,778	
	Star Fruit	2	0	502	.
	Coconut	0	0	128	.
	Coffee	683	410	396	967
	Sugarcane	47	34	199	5,910
	Cardamon	60	52	16	300
	Cinamon	.	0	.	.
	Jack Fruit	31	16	410	25,941
	Mpesheni	0	2	35	16,439
	Banana	3,588	2,456	8,462	3,446
	Avocado	144	211	869	4,119
	Mango	15	19	244	12,765
	Pawpaw	4	2	25	13,185
	Pineapple	3	10	7	710
	Orange	0	.	11	.
	Guava	3	0	18	.
	Pitches	0	.	0	.
	Lime/Lemon	2	0	0	.
Total	4,582	3,212	11,323	3,526	

cont..... Production of Permanent Crops by Crop Type and District, Kilimanjaro Region

Same	Sour Soup	30	.	.	.
	Pigeon Pea	29	29	.	.
	Coconut	30	25	118	4,792
	Coffee	3,500	5,038	338	67
	Wattle	30	30	.	.
	Sugarcane	822	437	8,440	19,304
	Cardamon	167	21	3	166
	Cinamon	.	0	7	.
	Jack Fruit	284	450	498	1,106
	Mpesheni	37	57	376	6,633
	Banana	3,936	1,859	10,899	5,864
	Avocado	1,944	370	1,707	4,614
	Mango	1,389	663	3,255	4,913
	Pawpaw	587	205	298	1,453
	Orange	150	134	108	806
	Grape	30	.	10	.
	Mandarine/Tangerine
	Guava	173	155	104	670
	Plums	.	.	14	.
	Pears	30	30	155	5,181
	Pitches	105	37	314	8,538
Lime/Lemon	.	.	18	.	
Total	13,274	9,538	26,664	2,795	
Moshi Rural	Pigeon Pea	43	43	191	4,450
	Malay Apple	95	25	44	1,764
	Coffee	12,713	9,735	15,166	1,558
	Sugarcane	73	3	11	3,895
	Nutmeg	.	.	7	.
	Jack Fruit	71	11	67	6,238
	Banana	25,513	17,762	165,222	9,302
	Avocado	1,648	783	4,882	6,234
	Mango	4,319	868	4,108	4,734
	Pawpaw	709	266	647	2,435
	Pineapple	16	0	.	.
	Orange	804	203	285	1,403
	Grape	27	27	0	10
	Mandarine/Tangerine	6	6	8	1,482
	Guava	543	48	39	823
	Plums	55	55	13	232
	Lime/Lemon	.	.	88	.
	Rambutan	33	33	143	4,323
Total	46,669	29,866	190,921	6,393	

cont..... Production of Permanent Crops by Crop Type and District, Kilimanjaro Region

Hai	Pigeon Pea	41	41	16	390
	Star Fruit	48	48	26	543
	Palm Oil	3	3	60	23,712
	Coconut	75	74	37	493
	Coffee	8,741	7,834	1,548	198
	Cocoa	25	13	5	395
	Rubber	17	17	10	581
	Sugarcane	0	0	7	14,820
	Cardamon	1	1	11	22,230
	Jack Fruit	10	10	88	9,263
	Mpesheni	4	4		
	Banana	7,898	10,777	41,415	3,843
	Avocado	748	469	1,262	2,692
	Mango	352	317	2,176	6,872
	Pawpaw	397	335	328	979
	Orange	172	91	106	1,165
	Grape	0	0	10	22,230
	Guava	91	61	26	434
	Lime/Lemon	23	23	4	187
	Total	18,645	20,115	47,135	2,343
Total	Pigeon Pea	549	170	303	1,787
	Malay Apple	95	25	45	1,816
	Star Fruit	49	48	528	11,084
	Palm Oil	3	3	60	23,712
	Coconut	105	99	283	2,847
	Coffee	35,808	27,634	19,523	706
	Tea	5	5	5	1,112
	Cocoa	188	56	17	302
	Rubber	17	17	10	581
	Wattle	202	63	141	2,232
	Sugarcane	942	474	8,656	18,262
	Cardamon	227	73	30	413
	Jack Fruit	406	486	1,062	2,185
	Mpesheni	42	63	411	6,554
	Banana	56,463	38,408	327,080	8,516
	Avocado	6,414	2,367	15,261	6,447
	Mango	8,045	4,301	17,370	4,038
	Pawpaw	2,151	982	2,000	2,037
	Pineapple	33	34	99	2,902
	Orange	1,284	447	789	1,767
	Grape Fruit	29	29	9	309
	Grape	58	28	21	743
	Mandarine/Tangerine	6	6	9	1,521
	Guava	811	264	264	1,000
	Plums	55	55	27	498
	Pears	30	30	155	5,181
	Pitches	105	37	315	8,547
	Lime/Lemon	70	23	129	5,686
Rambutan	33	33	143	4,323	
Total	114,253	76,257	394,758	5,177	

7.4: Total Area Planted with Banana by District - Kilimanjaro Region

Banana					
District	Area Planted with banana	Total area planted (ha)	% of total area planted (ha)	hh with banana	Average planted area per household
Rombo	15,528	18,640	83	29,985	1
Mwanga	3,588	8,822	41	8,483	0
Same	3,936	15,410	26	8,480	0
Moshi Rural	25,513	31,902	80	54,497	0
Hai	7,898	30,220	26	30,625	0
Total	56,463	104,994	54	132,070	0

7.5: Total Area Planted with Coffee by District - Kilimanjaro Region

Coffee					
District	Area Planted with banana	Total area planted (ha)	% of total area planted (ha)	hh with Coffee	Average planted area per household
Rombo	10,171	18,640	55	27,302	0
Mwanga	683	8,822	8	3,185	0
Same	3,500	15,410	23	4,180	1
Moshi Rural	12,713	31,902	40	40,069	0
Hai	8,741	30,220	29	23,715	0
Total	35,808	104,994	34	98,451	0

7.6: Total Area Planted with Mangoes by District - Kilimanjaro Region

Mangoes					
District	Area Planted with banana	Total area planted (ha)	% of total area planted (ha)	hh with Mangoes	Average planted area per household
Rombo	1,969	18,640	11	7,296	0
Mwanga	15	8,822	0	426	0
Same	1,389	15,410	9	2,631	1
Moshi Rural	4,319	31,902	14	8,217	1
Hai	352	30,220	1	3,694	0
Total	8,044	104,994	8	22,264	0

7.7: Total Area Planted with Avocado by District - Kilimanjaro Region

Avocado					
District	Area Planted with banana	Total area planted (ha)	% of total area planted (ha)	hh with Avocado	Average planted area per household
Rombo	1,930	18,640	10	9,636	0
Mwanga	144	8,822	2	1,306	0
Same	1,944	15,410	13	3,948	0
Moshi Rural	1,648	31,902	5	11,696	0
Hai	748	30,220	2	4,747	0
Total	6,414	104,994	6	31,333	0

cont...Planted Area with Fertiliser by Fertiliser Type and crop

Crop	Fertilizer Use				
	Mostly Farm Yard Manure	Mostly Compost	Mostly Inorganic Fertilizer	No Fertilizer Applied	Total
	Planted Area (ha)	Planted Area (ha)	Planted Area (ha)	Planted Area (ha)	Planted Area (ha)
Sour Soup	.	30	.	.	30
Pigeon Pea	160	18	.	371	549
Malay Apple	95	.	.	.	95
Star Fruit	48	.	.	2	49
Palm Oil	3	.	.	.	3
Coconut	68	.	.	37	105
Coffee	28,602	632	1,257	4,870	35,361
Tea	5	.	.	.	5
Cocoa	25	.	.	162	188
Rubber	17	.	.	.	17
Wattle	.	.	.	202	202
Sugarcane	242	145	.	551	938
Cardamon	38	11	13	165	227
Jack Fruit	180	.	.	223	403
Mpesheni	30	.	.	12	42
Banana	48,089	1,456	1,166	5,562	56,273
Avocado	2,118	748	1	3,536	6,402
Mango	3,026	949	8	4,063	8,045
Pawpaw	849	544	.	758	2,151
Pineapple	17	.	.	16	33
Orange	767	144	169	203	1,284
Grape Fruit	29	.	.	0	29
Grape	0	.	.	57	58
Mandarine/Tangerine	6	.	.	.	6
Guava	502	155	.	155	811
Plums	55	.	.	.	55
Pears	.	30	.	.	30
Pitches	38	7	.	60	105
Lime/Lemon	20	.	5	46	70
Rambutan	.	.	.	33	33
Total	85,027	4,868	2,619	21,082	113,596

cont...Planted Area with Fertiliser by Fertiliser Type and crop

Crop	Mostly Farm Yard Manure	Total Planted Area (ha)	%
Sour Soup	0	30	0
Pigeon Pea	160	549	29
Malay Apple	95	95	100
Star Fruit	48	49	97
Palm Oil	3	3	100
Coconut	68	105	65
Coffee	28,602	35,361	81
Tea	5	5	100
Cocoa	25	188	13
Rubber	17	17	100
Wattle	0	202	0
Sugarcane	242	938	26
Cardamon	38	227	17
Jack Fruit	180	403	45
Mpesheni	30	42	72
Banana	48,089	56,273	85
Avocado	2,118	6,402	33
Mango	3,026	8,045	38
Pawpaw	849	2,151	39
Pineapple	17	33	52
Orange	767	1,284	60
Grape Fruit	29	29	100
Grape	0	58	1
Mandarine/Tangerine	6	6	100
Guava	502	811	62
Plums	55	55	100
Pears	0	30	0
Pitches	38	105	36
Lime/Lemon	20	70	28
Rambutan	0	33	0
Total	85,027	113,596	75

cont...Planted Area with Fertiliser by Fertiliser Type and crop

	Mostly Compost	Total Planted Area (ha)	%
Sour Soup	30	30	100
Pigeon Pea	18	549	3
Malay Apple	0	95	0
Star Fruit	0	49	0
Palm Oil	0	3	0
Coconut	0	105	0
Coffee	632	35,361	2
Tea	0	5	0
Cocoa	0	188	0
Rubber	0	17	0
Wattle	0	202	0
Sugarcane	145	938	15
Cardamon	11	227	5
Jack Fruit	0	403	0
Mpesheni	0	42	0
Banana	1,456	56,273	3
Avocado	748	6,402	12
Mango	949	8,045	12
Pawpaw	544	2,151	25
Pineapple	0	33	0
Orange	144	1,284	11
Grape Fruit	0	29	0
Grape	0	58	0
Mandarine/Tangerine	0	6	0
Guava	155	811	19
Plums	0	55	0
Pears	30	30	100
Pitches	7	105	7
Lime/Lemon	0	70	0
Rambutan	0	33	0
Total	4,868	113,596	4

cont...Planted Area with Fertiliser by Fertiliser Type and crop

Crop	Mostly Inorganic Fertilizer	Total	%
Sour Soup	0	30	0
Pigeon Pea	0	549	0
Malay Apple	0	95	0
Star Fruit	0	49	0
Palm Oil	0	3	0
Coconut	0	105	0
Coffee	1,257	35,361	4
Tea	0	5	0
Cocoa	0	188	0
Rubber	0	17	0
Wattle	0	202	0
Sugarcane	0	938	0
Cardamon	13	227	6
Jack Fruit	0	403	0
Mpesheni	0	42	0
Banana	1,166	56,273	2
Avocado	1	6,402	0
Mango	8	8,045	0
Pawpaw	0	2,151	0
Pineapple	0	33	0
Orange	169	1,284	13
Grape Fruit	0	29	0
Grape	0	58	0
Mandarine/Tangerine	0	6	0
Guava	0	811	0
Plums	0	55	0
Pears	0	30	0
Pitches	0	105	0
Lime/Lemon	5	70	7
Rambutan	0	33	0
Total	2,619	113,596	2

AGROPROCESSING

8.1.1a Number of Crop Growing Households reported to have Processed Farm Products by District, 2002/03 agricultural year.

District	Households That Processed Product		Households That Did Not Process Product		Total	
	Number	%	Number	%	Number	%
Rombo	44,239	94	2,775	6	47,014	100
Mwanga	14,045	84	2,704	16	16,749	100
Same	25,050	86	4,052	14	29,103	100
Moshi Rural	60,236	78	16,590	22	76,826	100
Hai	28,339	61	18,142	39	46,481	100
Total	171,910	80	44,263	20	216,173	100

8.1.1b Number of Crop Growing Households Reporting Processing of Farm Products Produced During 2002/03 Agriculture Year By Method of Processing and District

District	Method of Processing							Total
	On Farm by Hand	On Farm by Machine	By Neighbour Machine	By Co-operative Union	By Trader	Other	By Factory	
Rombo	703	3,707	33,411	0	6,419	0	0	44,239
Mwanga	459	164	13,213	88	78	44	0	14,045
Same	1,306	1,891	21,635	0	145	0	74	25,050
Moshi Rural	1,536	10,838	43,000	139	4,328	136	260	60,236
Hai	1,228	599	25,245	819	338	0	111	28,339
Total	5,231	17,198	136,503	1,045	11,307	180	445	171,910

Crop	Product Use						Total
	Household / Human Consumption	Fuel for Cooking	Sale Only	Animal Consumption	Did Not Use	Other	
Maize	157,616	38	581	783	492	0	159,509
Paddy	4,495	0	850	0	0	0	5,346
Sorghum	224	0	0	0	0	0	224
Finger Millet	2,926	0	236	0	0	0	3,162
Cassava	1,808	0	0	0	0	0	1,808
Beans	2,336	0	381	0	191	0	2,908
Sunflower	21,795	116	0	0	0	0	21,911
Simsim	278	0	0	0	0	0	278
Groundnut	2,081	0	2,330	0	0	0	4,411
Coconut	127	0	0	0	0	0	127
Coffee	0	688	39,699	160	0	265	40,812
Sugarcane	73	0	542	0	0	44	659
Banana	1,854	0	199	0	0	0	2,053
Avocado	138	0	0	0	0	0	138
Cauliflower	125	0	0	0	0	0	125
Total	195,875	841	44,817	943	683	309	243,469

8.1.1d AGROPROCESSING: Number of Crop Growing Households Reporting Processing of Farm Products Produced During 2003/04 Agricultural Year By Location of Sale of Product and Crop

Crop	Where Sold								Total
	Neighbours	Local Market / Trade Store	Marketing Co-operative	Farmers Association	Large Scale Farm	Trader at Farm	Other	Did not Sell	
Maize	1,921	1,042	451	126	412	258	134	155,166	159,509
Paddy	67	784	74	71	0	74	0	4,276	5,346
Sorghum	0	0	0	0	0	0	0	224	224
Finger Millet	235	236	0	0	0	0	0	2,691	3,162
Cassava	74	0	0	0	0	0	0	1,734	1,808
Beans	236	669	74	0	0	0	0	1,929	2,908
Sunflower	393	738	235	0	0	118	247	20,180	21,911
Simsim	0	0	0	0	0	0	0	278	278
Groundnut	888	1,609	118	236	0	214	118	1,229	4,411
Coconut	0	0	0	0	0	0	0	127	127
Coffee	0	624	12,696	23,642	0	302	143	3,406	40,812
Sugarcane	301	0	0	0	0	215	144	0	659
Banana	0	0	0	199	0	0	0	1,854	2,053
Avocado	0	0	0	0	0	0	0	138	138
Cauliflower	0	0	0	0	0	0	0	125	125
Total	4,114	5,703	13,648	24,274	412	1,180	785	193,354	243,469

8.1.1e AGRO PROCESSING: Number of Crop Growing Households By Main Product During 2002/03 Agriculture Year and District

District	Main Product				Total
	Flour / Meal	Grain	Oil	Juice	
Rombo	39,668	2,688	1,883	0	44,239
Mwanga	13,503	376	44	122	14,045
Same	23,085	1,823	0	142	25,050
Moshi Rural	47,794	12,179	263	0	60,236
Hai	26,429	950	960	0	28,339
Total	150,479	18,016	3,150	265	171,910

8.1.1.f AGRO PROCESSING: Number of Crop Growing Households By Use of Primary Processed Product During 2002/03 Agriculture Year and District

District	Product Use						Total
	Household / Human Consumption	Fuel for Cooking	Sale Only	Animal Consumption	Did Not Use	Other	
Rombo	42,010	118	1,993	0	118	0	44,239
Mwanga	13,662	38	128	130	44	44	14,045
Same	23,891	0	867	221	72	0	25,050
Moshi Rural	51,972	139	7,724	0	136	265	60,236
Hai	27,165	0	619	432	123	0	28,339
Total	158,700	294	11,332	783	492	309	171,910

8.1.1.g AGRO PROCESSING: Number of Crop Growing Households By Where Product Sold During 2002/03 Agriculture Year and District

District	Where Sold								Total
	Neighbours	Local Market / Trade Store	Marketing Co-operative	Farmers Association	Large Scale Farm	Trader at Farm	Other	Did not Sell	
Rombo	352	235	942	1,055	0	114	0	41,541	44,239
Mwanga	289	84	219	41	73	123	0	13,218	14,045
Same	507	663	363	71	71	0	143	23,233	25,050
Moshi Rural	679	412	4,501	3,218	268	135	134	50,889	60,236
Hai	251	113	0	377	0	0	0	27,598	28,339
Total	2,077	1,507	6,025	4,762	412	371	277	156,479	171,910

8.1.1.h AGRO PROCESSING: Number of Crop Growing Households By By-Product During 2002/03 Agriculture Year and District

District	By Product									Total
	Bran	Cake	Husk	Juice	Pulp	Oil	Shell	No by-product	Other	
Rombo	7,297	10,468	118	0	3,989	236	118	22,014	0	44,239
Mwanga	7,064	0	0	0	0	0	218	6,764	0	14,045
Same	6,469	0	676	71	356	0	1,377	16,102	0	25,050
Moshi Rural	7,047	4,876	1,204	245	2,842	0	246	43,637	138	60,236
Hai	10,367	2,842	672	0	248	0	245	13,964	0	28,339
Total	38,244	18,186	2,670	317	7,435	236	2,203	102,480	138	171,910

MARKETING

10 MARETING: Number of Crop Producing Households Reporting Selling Agricultural Products During 2003/04 By District

District	Did the Hh Sell any Crops from the 2002/03 season?				Total Number of Households
	Number of Households that Sold		Number of Households that Did not Sell		
	Number	%	Number	%	
Rombo	41,831	89	5,183	11	47,014
Mwanga	10,443	62	6,306	38	16,749
Same	18,721	64	10,382	36	29,103
Moshi Rural	64,370	84	12,456	16	76,826
Hai	32,344	70	14,137	30	46,481
Total	167,709	78	48,464	22	216,173

10 MARETING: Number of Crop Producing Households Reporting Not Selling Agricultural Products During 2003/04 By Reason for Not Selling Crops By District

District	Main Reasons for Not Selling Crops									Total
	Price Too Low	Production Insufficient to Sell	Market Too Far	Farmers Association Problems	Co-operative Problems	Trade Union Problems	Government Regulatory Board Problems	Other	Not applicable	
Rombo	1,145	19,210	118	0	0	0	0	231	23,051	43,754
Mwanga	115	7,012	0	44	43	131	43	116	7,516	15,020
Same	444	8,255	0	0	0	218	0	2,337	17,411	28,665
Moshi Rural	2,670	20,421	263	0	0	136	0	2,093	37,978	63,561
Hai	654	18,979	248	0	250	0	0	1,248	17,992	39,372
Total	5,028	73,877	629	44	293	484	43	6,025	103,947	190,372

10.3 Proportion of Households who Reported Main Reason for Not Selling their Crops by District During 2002/03 Agricultural Year

District	Main Reasons for Not Selling Crops									Total
	Price Too Low	Production Insufficient to Sell	Market Too Far	Farmers Association Problems	Co-operative Problems	Trade Union Problems	Government Regulatory Board Problems	Other	Not applicable	
Rombo	2.62	43.90	0.27	0.00	0.00	0.00	0.00	0.53	52.68	100.00
Mwanga	0.77	46.69	0.00	0.29	0.29	0.87	0.28	0.77	50.04	100.00
Same	1.55	28.80	0.00	0.00	0.00	0.76	0.00	8.15	60.74	100.00
Moshi Rural	4.20	32.13	0.41	0.00	0.00	0.21	0.00	3.29	59.75	100.00
Hai	1.66	48.21	0.63	0.00	0.64	0.00	0.00	3.17	45.70	100.00
Total	2.64	38.81	0.33	0.02	0.15	0.25	0.02	3.17	54.60	100.00

IRRIGATION

Table 11.1: Number and Percent of Crop Growing Households Reporting of Practicing Irrigation During 2002/03 Agriculture Year By District

District	Does the Household Practice Irrigation?				
	Households Practicing Irrigation		Households not Practicing Irrigation		Total
	Number of Household	%	Number of Household	%	Number of Household
Rombo	0	0	47,014	100	47,014
Mwanga	3,906	23	12,843	77	16,749
Same	12,350	42	16,752	58	29,103
Moshi Rural	17,408	23	59,418	77	76,826
Hai	15,047	32	31,435	68	46,481
Total	48,710	23	167,462	77	216,173

11.2: IRRIGATION: Area of Irrigated and Non Irrigatable (ha) Land By District

District	Irrigatable Area (Ha)	Area Irrigated Land (Ha)	%
Rombo	.	.	.
Mwanga	2,546	2,063	81
Same	8,089	6,242	77
Moshi Rural	10,949	8,605	79
Hai	7,392	6,215	84
Total	28,976	23,126	80

11.3: IRRIGATION: Number of Households Using Irrigation By Source of Irrigation Water During 2003/04 Agricultural Year By District

District	Source of Irrigation Water							Total
	River	Lake	Dam	Well	Borehole	Canal	Pipe water	
Mwanga	1,520	0	173	44	43	2,084	42	3,906
Same	7,442	0	942	657	0	3,309	0	12,350
Moshi Rural	5,799	0	0	133	0	10,620	857	17,408
Hai	3,268	125	209	125	0	11,195	126	15,047
Total	18,029	125	1,323	959	43	27,208	1,024	48,710

11.4: IRRIGATION: Number of Households Using Irrigation By Method of Irrigation of Obtaining Water By District

District	Method of Obtaining Water					Total
	Gravity	Hand Bucket	Hand Pump	Motor Pump	Other	
Mwanga	3,655	212	0	0	38	3,906
Same	11,914	365	71	0	0	12,350
Moshi Rural	15,418	1,922	0	67	0	17,408
Hai	14,559	488	0	0	0	15,047
Total	45,546	2,988	71	67	38	48,710

11.5: IRRIGATION: Number of Households Using Irrigation By Method of Irrigation Application By District

District	Method of Application				Total
	Flood	Sprinkler	Water Hose	Bucket / Watering Can	
Mwanga	3,563	44	129	170	3,906
Same	11,690	73	0	587	12,350
Moshi Rural	15,557	132	267	1,451	17,408
Hai	14,350	0	96	601	15,047
Total	45,160	249	492	2,809	48,710

11.6: IRRIGATION: Number of Households With Erosion Control/Water Harvesting Facilities on their Land By District

District	Presence of Erosion Control/water Harvesting Facilities				
	Have facility		Does Not Have Facility		Total
	Number	%	Number	%	
Rombo	23,763	51	23,251	49	47,014
Mwanga	5,668	34	11,081	66	16,749
Same	13,486	46	15,617	54	29,103
Moshi Rural	17,588	23	59,238	77	76,826
Hai	7,243	16	39,238	84	46,481
Total	67,748	31	148,425	69	216,173

11.7 EROSION CONTROL: Number of Erosion Control Harvesting Structures By Type and District

District	Type of Erosion Control								Total
	Terraces	Erosion Control Bunds	Gabions / Sandbag	Vetiver Grass	Tree Belts	Water Harvesting Bunds	Drainage Ditches	Dam	
Rombo	3,055	60,647	688	1,985	9,151	18,974	15,100		109,599
Mwanga	59,476	11,225	129	8,500	1,833	6,589	738	0	88,489
Same	162,760	99,890	285	11,402	12,227	29,591	4,646	72	320,873
Moshi Rural	3,770	55,424		2,470	5,546	11,977	5,163	139	84,488
Hai	1,501	25,239	377	11,430	3,611	461	3,224	873	46,716
Total	230,562	252,425	1,478	35,786	32,368	67,592	28,871	1,084	650,165

ACCESS TO FARM INPUTS/IMPLEMENTS

Table 12.1.1 ACCESS TO INPUTS: Number of Agricultural Households Using Chemical Fertilizer by District, 2002/03 Agricultural Year

District	Using Chemical Fertilizers		NOT Using Chemical Fertilizers		Total Crop Growing Households
	No. of Households	%	No. of Households	%	
Rombo	6,436	14	40,578	86	47,014
Mwanga	1,238	7	15,511	93	16,749
Same	5,413	19	23,690	81	29,103
Moshi Rural	34,189	45	42,637	55	76,826
Hai	27,275	59	19,206	41	46,481
Total	74,551	34	141,622	66	216,173

Table 12.1.2 ACCESS TO INPUTS: Number of Agricultural Households Using Farm Yard Manure by District, 2002/03 Agricultural Year

District	Using Farm Yard		NOT Using Farm		Total Crop Growing Households
	No. of Households	%	No. of Households	%	
Rombo	45,269	96	1,746	4	47,014
Mwanga	11,658	70	5,091	30	16,749
Same	17,319	60	11,784	40	29,103
Moshi Rural	56,228	73	20,597	27	76,826
Hai	29,307	63	17,175	37	46,481
Total	159,780	74	56,393	26	216,173

Table 12.1.3 ACCESS TO INPUTS: Number of Agricultural Households Using COMPOST Manure by District, 2002/03 Agricultural Year

District	Using COMPOST		NOT Using		Total Crop Growing Households
	No. of Households	%	No. of Households	%	
Rombo	2,453	5	44,561	95	47,014
Mwanga	658	4	16,091	96	16,749
Same	9,030	31	20,073	69	29,103
Moshi Rural	3,056	4	73,908	96	76,963
Hai	715	2	45,766	98	46,481
Total	15,912	7	200,399	93	216,310

Table 12.1.4 ACCESS TO INPUTS: Number of Agricultural Households Using Pesticides/Fungicides by District, 2002/03 Agricultural Year

District	Using Pesticides/Fungicides		NOT Using Pesticides/Fungicides		Total Crop Growing Households
	No.of Households	%	No.of Households	%	
Rombo	28,552	61	18,462	39	47,014
Mwanga	3,228	19	13,520	81	16,749
Same	7,443	26	21,660	74	29,103
Moshi Rural	10,561	14	66,265	86	76,826
Hai	16,199	35	30,283	65	46,481
Total	65,983	31	150,189	69	216,173

Table 12.1.5 ACCESS TO INPUTS: Number of Agricultural Households Using Herbicides by District, 2002/03 Agricultural Year

District	Using Herbicides		NOT Using Herbicides		Total Crop Growing Households
	No.of Households	%	No.of Households	%	
Rombo	1,320	3	45,695	97	47,014
Mwanga	135	1	16,614	99	16,749
Same	72	0	29,031	100	29,103
Moshi Rural	2,510	3	74,316	97	76,826
Hai	3,480	7	43,001	93	46,481
Total	7,516	3	208,657	97	216,173

Table 12.1.6 ACCESS TO INPUTS: Number of Agricultural Households using Improved Seeds by District, 2002/03 Agricultural Year

District	Using Improved Seeds		NOT Using Improved Seeds		Total Crop Growing Households
	No.of Households	%	No.of Households	%	
Rombo	28,450	61	18,564	39	47,014
Mwanga	6,250	37	10,499	63	16,749
Same	11,236	39	17,867	61	29,103
Moshi Rural	34,865	45	41,960	55	76,826
Hai	28,041	60	18,565	40	46,607
Total	108,843	50	107,456	50	216,298

Table 12.1.7 ACCESS TO INPUTS: Number of Agricultural Households and Source of Chemical Fertilizer by District, 2002/03 Agricultural Year

District	Co-operative		Local Farmers Group		Local Market / Trade Store		Secondary Market		Development Project		Crop Buyers		Neighbour		Other		Not applicable		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	823	2	0	0	5,496	12	0	0	0	0	0	0	0	0	117	0	40,578	86	47,014
Mwanga	0	0	0	0	1,238	7	0	0	0	0	0	0	0	0	0	0	15,511	93	16,749
Same	73	0	0	0	5,271	18	0	0	0	0	0	0	68	0	0	0	23,690	81	29,103
Moshi Rural	2,293	3	1,472	2	29,784	39	134	0	0	0	261	0	245	0	0	0	42,637	55	76,826
Hai	353	1	236	1	26,494	57	96	0	96	0	0	0	0	0	0	0	19,082	41	46,356
Total	3,542	2	1,708	1	68,283	32	230	0	96	0	261	0	314	0	117	0	141,497	65	216,048

Table 12.1.8 ACCESS TO INPUTS: Number of Agricultural Households and Source of Farm Yard Manure by District, 2002/03 Agricultural Year

District	Co-operative		Local Farmers Group		Local Market / Trade Store		Development Project		Large Scale Farm		Locally Produced by Household		Neighbour		Other		Not applicable		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	588	1	117	0	588	1	0	0	118	0	41,515	88	2,108	4	235	0	1,746	4	47,014
Mwanga	84	1	126	1	43	0	0	0	0	0	10,318	62	927	6	161	1	5,091	30	16,749
Same	74	0	73	0	220	1	0	0	0	0	12,963	45	3,988	14	0	0	11,784	40	29,103
Moshi Rural	135	0	512	1	3,366	4	133	0	270	0	48,454	63	3,359	4	0	0	20,597	27	76,826
Hai	126	0	0	0	1,045	2	118	0	249	1	21,811	47	4,052	9	1,906	4	17,050	37	46,356
Total	1,006	0	828	0	5,261	2	250	0	637	0	135,061	63	14,434	7	2,301	1	56,268	26	216,048

Table 12.1.9 ACCESS TO INPUTS: Number of Agricultural Households and Source of COMPOST Manure by District, 2002/03 Agricultural Year

District	Co-operative		Local Farmers Group		Local Market / Trade Store		Locally Produced by Household		Neighbour		Other		Not applicable		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	0	0	0	0	0	0	2,335	5	118	0	0	0	44,561	95	47,014
Mwanga	43	0	0	0	0	0	615	4	0	0	0	0	16,091	96	16,749
Same	0	0	73	0	74	0	7,646	26	1,022	4	215	1	20,073	69	29,103
Moshi Rural	0	0	0	0	139	0	1,398	2	1,519	2	0	0	73,908	96	76,963
Hai	0	0	0	0	0	0	715	2	0	0	0	0	45,641	98	46,356
Total	43	0	73	0	213	0	12,708	6	2,659	1	215	0	200,274	93	216,186

Table 12.1.10 ACCESS TO INPUTS: Number of Agricultural Households and Source of Pesticides/Fungicides by District, 2002/03 Agricultural Year

District	Co-operative		Local Farmers Group		Local Market / Trade Store		Secondary Market		Development Project		Crop Buyers		Locally Produced by Household		Neighbour		Other		Not applicable		Total Number	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%		
Rombo	10,103	21	1,288	3	16,343	35	233	0	0	0	0	118	0	352	1	115	0	0	0	18,462	39	47,014
Mwanga	219	1	44	0	2,922	17	0	0	0	0	0	0	0	44	0	0	0	0	0	13,520	81	16,749
Same	294	1	294	1	5,340	18	0	0	0	0	0	0	0	885	3	629	2	0	0	21,660	74	29,103
Moshi Rural	679	1	136	0	9,222	12	134	0	133	0	125	0	0	0	0	132	0	0	0	66,265	86	76,826
Hai	696	2	118	0	15,135	33	126	0	0	0	0	0	0	0	0	125	0	125	0	30,158	65	46,356
Total	11,991	6	1,880	1	48,962	23	493	0	133	0	242	0	1,282	1	875	0	125	0	150,065	69	216,048	

Table 12.1.11 ACCESS TO INPUTS: Number of Agricultural Households and Source of Herbicides by District, 2002/03 Agricultural Year

District	Co-operative		Local Market / Trade Store		Secondary Market		Development Project		Not applicable		Total Number
	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	118	0	1,202	3	0	0	0	0	45,695	97	47,014
Mwanga	0	0	135	1	0	0	0	0	16,614	99	16,749
Same	0	0	0	0	0	0	72	0	29,031	100	29,103
Moshi Rural	134	0	2,242	3	134	0	0	0	74,316	97	76,826
Hai	0	0	3,480	8	0	0	0	0	42,876	92	46,356
Total	252	0	7,058	3	134	0	72	0	208,532	97	216,048

Table 12.1.12 ACCESS TO INPUTS: Number of Agricultural Households Source of Improved Seeds by District, 2002/03 Agricultural Year

District	Co-operative		Local Farmers Group		Local Market / Trade Store		Secondary Market		Development Project		Crop Buyers		Large Scale Farm		Locally Produced by Household		Neighbour		Other		Not applicable		Total Number		
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%			
Rombo	3,998	9	1,059	2	22,456	48	235	0	117	0	0	0	117	0	116	0	233	0	117	0	0	0	18,564	39	47,014
Mwanga	86	1	172	1	5,657	34	0	0	0	0	0	0	0	0	43	0	292	2	0	0	0	0	10,499	63	16,749
Same	73	0	134	0	9,627	33	0	0	514	2	0	0	304	1	363	1	146	1	74	0	0	0	17,867	61	29,103
Moshi Rural	2,364	3	538	1	29,685	39	272	0	133	0	619	1	67	0	654	1	520	1	138	0	0	0	41,835	54	76,826
Hai	605	1	324	1	25,819	56	96	0	310	1	0	0	303	1	123	0	355	1	107	0	0	0	18,441	40	46,482
Total	7,127	3	2,228	1	93,244	43	603	0	1,074	0	619	0	791	0	1,299	1	1,546	1	437	0	0	0	107,206	50	216,174

Table 12.1.13 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Chemical Fertilizer by District, 2002/03 Agricultural Year

District	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	1,525	24	3,384	53	1,409	22	118	2	0	0	6,436
Mwanga	128	10	301	24	432	35	260	21	117	9	1,238
Same	1,035	19	2,429	45	590	11	647	12	712	13	5,413
Moshi Rural	9,735	28	7,327	21	12,527	37	3,589	10	1,010	3	34,189
Hai	7,395	27	4,551	17	7,531	28	7,192	26	605	2	27,275
Total	19,818	27	17,993	24	22,489	30	11,806	16	2,444	3	74,551

Table 12.1.14 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Farm Yard Manure by District, 2002/03 Agricultural Year

District	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	43,290	96	939	2	583	1	221	0	235	1	45,269
Mwanga	11,427	98	117	1	114	1	0	0	0	0	11,658
Same	15,427	89	1,404	8	487	3	0	0	0	0	17,319
Moshi Rural	51,899	92	1,544	3	2,255	4	261	0	270	0	56,228
Hai	27,882	95	823	3	227	1	375	1	0	0	29,307
Total	149,924	94	4,827	3	3,667	2	857	1	505	0	159,780

Table 12.1.15 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of COMPOST Manure by District, 2002/03 Agricultural Year

District	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	2,453	100	0	0	0	0	0	0	0	0	2,453
Mwanga	623	95	0	0	0	0	0	0	35	5	658
Same	8,223	91	363	4	296	3	147	2	0	0	9,030
Moshi Rural	2,714	89	202	7	139	5	0	0	0	0	3,056
Hai	590	82	0	0	0	0	126	18	0	0	715
Total	14,603	92	566	4	434	3	273	2	35	0	15,912

Table 12.1.16 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Pesticides/Fungicides by District, 2002/03 Agricultural Year

District	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	5,647	20	15,314	54	6,648	23	825	3	118	0	28,552
Mwanga	523	16	558	17	1,117	35	629	19	402	12	3,228
Same	1,953	26	1,676	23	1,227	16	951	13	1,637	22	7,443
Moshi Rural	3,062	29	2,188	21	3,896	37	873	8	542	5	10,561
Hai	5,019	31	1,181	7	6,781	42	2,694	17	522	3	16,199
Total	16,204	25	20,917	32	19,669	30	5,973	9	3,221	5	65,983

Table 12.1.18 ACCESS TO INPUTS: Number of Agricultural Households and Distance to Source of Improved Seeds by District, 2002/03 Agricultural Year

District	Less than 1 km		Between 1 and 3 km		Between 3 and 10 km		Between 10 and 20 km		20 km and Above		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	7,279	26	14,727	52	5,619	20	707	2	118	0	28,450
Mwanga	1,395	22	1,399	22	1,726	28	931	15	798	13	6,250
Same	1,859	17	2,066	18	2,880	26	1,898	17	2,533	23	11,236
Moshi Rural	8,565	24	6,223	18	14,312	41	4,604	13	1,286	4	34,990
Hai	7,732	28	4,499	16	9,821	35	5,608	20	382	1	28,041
Total	26,830	25	28,914	27	34,357	32	13,749	13	5,117	5	108,968

Table 12.1.25 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Chemical Fertilizer by District, 2002/03
Agricultural Year

District	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Locally Produced by Household		Other		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	468	1	32,774	81	2,690	7	0	0	350	1	3,246	8	116	0	933	2	40,578
Mwanga	322	2	12,946	83	87	1	43	0	559	4	1,480	10	0	0	74	0	15,511
Same	2,295	10	17,324	73	634	3	219	1	296	1	2,352	10	0	0	568	2	23,690
Moshi Rural	1,023	2	29,264	69	892	2	0	0	135	0	6,546	15	132	0	4,643	11	42,637
Hai	333	2	15,584	81	201	1	125	1	0	0	1,643	9	0	0	1,322	7	19,206
Total	4,442	3	107,893	76	4,505	3	387	0	1,340	1	15,267	11	248	0	7,541	5	141,622

Table 12.1.26 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Farm Yard Manure by District, 2002/03
Agricultural Year

District	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Locally Produced by Household		Other		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	586	34	350	20	234	13	115	7	344	20	0	0	0	0	117	7	1,746
Mwanga	258	5	300	6	3,387	67	74	1	222	4	615	12	0	0	235	5	5,091
Same	3,195	27	2,615	22	3,969	34	1,168	10	0	0	202	2	0	0	635	5	11,784
Moshi Rural	7,794	38	2,203	11	6,243	30	1,027	5	67	0	1,615	8	115	1	1,532	7	20,597
Hai	6,817	40	3,409	20	3,709	22	588	3	527	3	814	5	0	0	1,312	8	17,175
Total	18,650	33	8,878	16	17,542	31	2,971	5	1,160	2	3,245	6	115	0	3,831	7	56,393

Table 12.1.27 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using COMPOST Manure by District, 2002/03
Agricultural Year

District	Not Available		Price Too High		No Money to Buy		Too Much Labour		Do not Know How to Use		Input is of No Use		Locally Produced by		Other		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	2,486	6	3,290	7	20,892	47	580	1	11,420	26	4,140	9	0	0	1,753	4	44,561
Mwanga	392	2	843	5	8,315	52	776	5	3,705	23	1,863	12	87	1	111	1	16,091
Same	3,423	17	4,414	22	9,157	46	1,259	6	268	1	922	5	0	0	630	3	20,073
Moshi Rural	6,430	9	9,308	13	38,760	52	2,760	4	7,816	11	7,686	10	358	0	789	1	73,908
Hai	9,093	20	7,673	17	6,810	15	1,659	4	13,304	29	6,003	13	125	0	1,100	2	45,766
Total	21,823	11	25,528	13	83,934	42	7,035	4	36,513	18	20,613	10	570	0	4,383	2	200,399

Table 12.1.28 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Pesticides/Fungicides by District, 2002/03 Agricultural Year

District	Not Available		Price Too High		No Money to Buy		Too Much Labour		Do not Know How to Use		Input is of No Use		Other		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	232	1	13,098	71	696	4	115	1	2,464	13	1,171	6	685	4	18,462
Mwanga	260	2	9,496	70	358	3	43	0	347	3	2,943	22	73	1	13,520
Same	2,182	10	17,042	79	638	3	145	1	148	1	1,016	5	488	2	21,660
Moshi Rural	1,429	2	48,006	72	1,286	2	833	1	1,581	2	12,074	18	1,056	2	66,265
Hai	1,846	6	21,683	72	479	2	243	1	101	0	5,089	17	842	3	30,283
Total	5,949	4	109,326	73	3,457	2	1,379	1	4,642	3	22,293	15	3,144	2	150,189

Table 12.1.29 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Herbicides by District, 2002/03 Agricultural Year

District	Not Available		Price Too High		No Money to Buy		Too Much Labour		Do not Know How to Use		Input is of No Use		Other		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	937	2	17,109	37	3,047	7	0	0	5,492	12	17,372	38	1,738	4	45,695
Mwanga	727	4	8,223	49	371	2	44	0	1,356	8	5,863	35	30	0	16,614
Same	2,993	10	14,081	49	843	3	0	0	4,199	14	6,199	21	717	2	29,031
Moshi Rural	1,925	3	36,645	49	2,269	3	0	0	3,460	5	29,496	40	521	1	74,316
Hai	1,971	5	29,108	68	251	1	118	0	557	1	10,154	24	842	2	43,001
Total	8,552	4	105,166	50	6,781	3	162	0	15,064	7	69,085	33	3,848	2	208,657

Table 12.1.30 ACCESS TO INPUTS: Number of Agricultural Households and Reason for NOT using Improved Seeds by District, 2002/03 Agricultural Year

District	Not Available		Price Too High		No Money to Buy		Too Much Labour Required		Do not Know How to Use		Input is of No Use		Locally Produced by Household		Other		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	350	2	13,328	72	1,169	6	0	0	1,646	9	1,615	9	0	0	456	2	18,564
Mwanga	159	2	9,696	92	122	1	0	0	0	0	448	4	44	0	30	0	10,499
Same	1,814	10	14,991	84	499	3	0	0	0	0	216	1	0	0	347	2	17,867
Moshi Rural	1,564	4	33,371	80	670	2	139	0	408	1	4,760	11	0	0	923	2	41,835
Hai	501	3	15,352	83	125	1	125	1	0	0	1,837	10	0	0	625	3	18,565
Total	4,388	4	86,740	81	2,584	2	264	0	2,054	2	8,875	8	44	0	2,382	2	107,331

Table 12.1.31 ACCESS TO INPUTS: Number of Agricultural Households and Quality of Chemical Fertilizer by District, 2002/03 Agricultural Year

District	Excellent		Good		Average		Poor		Total
	Number	%	Number	%	Number	%	Number	%	Number
Rombo	2,929	46	3,390	53	117	2	0	0	6,436
Mwanga	405	33	750	61	82	7	0	0	1,238
Same	1,139	21	3,129	58	931	17	142	3	5,413
Moshi Rural	11,332	33	19,755	58	3,102	9	0	0	34,189
Hai	11,091	41	14,387	53	1,559	6	113	0	27,275
Total	26,897	36	41,411	56	5,791	8	255	0	74,551

Table 12.1.32 ACCESS TO INPUTS: Number of Agricultural Households and Quality of Farm Yard Manure by District, 2002/03 Agricultural Year

District	Excellent		Good		Average		Poor		Total
	Number	%	Number	%	Number	%	Number	%	Number
Rombo	25,923	57	18,181	40	1,047	2	118	0	45,269
Mwanga	6,891	59	4,341	37	382	3	44	0	11,658
Same	5,222	30	10,723	62	1,302	8	72	0	17,319
Moshi Rural	24,719	44	28,169	50	3,341	6	0	0	56,228
Hai	10,120	35	17,555	60	1,632	6	0	0	29,307
Total	72,873	46	78,968	49	7,705	5	233	0	159,780

Table 12.1.33 ACCESS TO INPUTS: Number of Agricultural Households and Quality of COMPOST Manure by District,

District	Excellent		Good		Average		Total
	Number	%	Number	%	Number	%	Number
Rombo	941	38	1,394	57	118	5	2,453
Mwanga	298	45	282	43	78	12	658
Same	1,969	22	6,116	68	946	10	9,030
Moshi Rural	1,232	40	1,823	60	0	0	3,056
Hai	126	18	590	82	0	0	715
Total	4,566	29	10,204	64	1,142	7	15,912

Table 12.1.34 ACCESS TO INPUTS: Number of Agricultural Households and Quality of Pesticides/Fungicides by District, 2002/03 Agricultural Year

District	Excellent		Good		Average		Poor		Does not Work		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	5,136	18	20,712	73	2,587	9	118	0	0	0	28,552
Mwanga	378	12	2,358	73	462	14	30	1	0	0	3,228
Same	1,627	22	4,588	62	1,228	17	0	0	0	0	7,443
Moshi Rural	4,138	39	5,887	56	536	5	0	0	0	0	10,561
Hai	4,819	30	8,965	55	2,038	13	251	2	126	1	16,199
Total	16,098	24	42,509	64	6,851	10	399	1	126	0	65,983

Table 12.1.35 ACCESS TO INPUTS: Number of Agricultural Households and Quality of Herbicides by District, 2002/03 Agricultural Year

District	Excellent		Good		Average		Total
	Number	%	Number	%	Number	%	Number
Rombo	646	49	673	51	0	0	1,320
Mwanga	0	0	135	100	0	0	135
Same	0	0	72	100	0	0	72
Moshi Rural	1,560	62	812	32	138	5	2,510
Hai	929	27	2,300	66	251	7	3,480
Total	3,136	42	3,991	53	389	5	7,516

Table 12.1.36 ACCESS TO INPUTS: Number of Agricultural Households and Quality of Improved Seeds by District, 2002/03 Agricultural Year

District	Excellent		Good		Average		Does not Work		Total
	Number	%	Number	%	Number	%	Number	%	Number
Rombo	8,622	30	17,824	63	2,005	7	0	0	28,450
Mwanga	2,586	41	3,296	53	325	5	43	1	6,250
Same	2,306	21	8,354	74	576	5	0	0	11,236
Moshi Rural	10,155	29	22,578	65	2,257	6	0	0	34,990
Hai	10,527	38	15,575	56	1,814	6	126	0	28,041
Total	34,195	31	67,627	62	6,977	6	169	0	108,968

Table 12.1.37 ACCESS TO INPUTS: Number of Agricultural Households With Plan to use Next Year Chemical Fertilizer by District, 2002/03 Agricultural Year

District	With Plan to use Next Year Chemical Fertilizers		NO Plan to use Next Year Chemical Fertilizers		Total
	Number	%	Number	%	Number
Rombo	14,296	30	32,718	70	47,014
Mwanga	4,119	25	12,630	75	16,749
Same	12,728	44	16,375	56	29,103
Moshi Rural	46,543	61	30,283	39	76,826
Hai	34,234	74	12,247	26	46,481
Total	111,920	52	104,253	48	216,173

Table 12.1.38 ACCESS TO INPUTS: Number of Agricultural Households With Plan to use Next Year Farm Yard Manure by District, 2002/03 Agricultural Year

District	With Plan to use Next Year Farm Yard Manure		NO Plan to use Next Year Farm Yard Manure		Total
	Number	%	Number	%	Number
Rombo	45,037	96	1,977	4	47,014
Mwanga	13,216	79	3,533	21	16,749
Same	23,498	81	5,605	19	29,103
Moshi Rural	57,201	74	19,625	26	76,826
Hai	31,869	69	14,612	31	46,481
Total	170,820	79	45,353	21	216,173

Table 12.1.39 ACCESS TO INPUTS: Number of Agricultural Households With Plan to use Next Year COMPOST Manure by District, 2002/03 Agricultural Year

District	With Plan to use Next Year COMPOST Manure		NO Plan to use Next Year COMPOST Manure		Total
	Number	%	Number	%	Number
Rombo	5,659	12	41,355	88	47,014
Mwanga	2,143	13	14,605	87	16,749
Same	15,537	53	13,566	47	29,103
Moshi Rural	6,197	8	70,767	92	76,963
Hai	5,549	12	40,932	88	46,481
Total	35,085	16	181,226	84	216,310

Table 12.1.40 ACCESS TO INPUTS: Number of Agricultural Households With Plan to use Next Year Pesticides/Fungicides by District, 2002/03

District	With Plan to use Next Year Pesticides/Fungicides		NO Plan to use Next Year Pesticides/Fungicides		Total
	Number	%	Number	%	
Rombo	35,674	76	11,341	24	47,014
Mwanga	6,071	36	10,678	64	16,749
Same	17,720	61	11,383	39	29,103
Moshi Rural	26,488	34	50,338	66	76,826
Hai	24,995	54	21,486	46	46,481
Total	110,947	51	105,226	49	216,173

Table 12.1.41 ACCESS TO INPUTS: Number of Agricultural Households With Plan to use Next Year Herbicides by District, 2002/03 Agricultural

District	With Plan to use Next Year Herbicides		NO Plan to use Next Year Herbicides		Total
	Number	%	Number	%	
Rombo	4,008	9	43,006	91	47,014
Mwanga	600	4	16,149	96	16,749
Same	3,501	12	25,602	88	29,103
Moshi Rural	9,545	12	67,281	88	76,826
Hai	10,065	22	36,416	78	46,481
Total	27,719	13	188,454	87	216,173

Table 12.1.42 ACCESS TO INPUTS: Number of Agricultural Households using Improved Seeds by District, 2002/03 Agricultural Year

District	With Plan to use Next Year Improved Seeds		NO Plan to use Next Year Improved Seeds		Total
	Number	%	Number	%	
Rombo	35,347	75	11,667	25	47,014
Mwanga	11,953	71	4,796	29	16,749
Same	21,938	75	7,165	25	29,103
Moshi Rural	48,204	63	28,622	37	76,826
Hai	33,443	72	13,164	28	46,607
Total	150,884	70	65,414	30	216,298

AGRICULTURE CREDITS

13.2a: AGRICULTURE CREDIT: Number of Households Receiving Credit By Sex of Household Member Receiving Credit By District

District	Male		Female		Total
	Number	%	Number	%	Number
Rombo	115	50	114	50	228
Mwanga	0	0	76	100	76
Same	572	89	68	11	641
Moshi Rural	135	43	180	57	315
Hai	2,145	90	238	10	2,383
Total	2,967	81	677	19	3,643
%	81		19		

13.2b: AGRICULTURE CREDIT: Number of Households Receiving Credit By Source of Credit By District

District	Source of Credit						Total
	Family, Friend and Relative	Commercial Bank	Co-operative	Saving & Credit Society	Trader / Trade Store	Religious Organisation / NGO / Project	
Rombo	228	0	0	0	0	0	228
Mwanga	0	0	0	76	0	0	76
Same	142	0	73	205	0	220	641
Moshi Rural	248	0	0	0	0	67	315
Hai	1,041	107	0	0	126	1,109	2,383
Total	1,660	107	73	281	126	1,396	3,643

13.2c: AGRICULTURE CREDIT: Number of Households Receiving Credit By Reason for Not Using Credit By District

District	Reason for Not Using Credit									
	Not needed	Not available	Did not want to go into debt	Interest rate/cost too high	Did not know how to get credit	Difficult bureaucracy procedure	Credit granted too late	Other	Don't know about credit	Total
Rombo	6,229	2,315	10,290	2,441	13,013	680	0	0	11,818	46,786
Mwanga	2,068	728	4,675	1,026	4,227	1,045	166	88	2,648	16,672
Same	1,806	1,357	4,758	648	10,849	293	360	0	8,391	28,462
Moshi Rural	11,157	9,483	8,146	5,986	29,361	337	525	137	11,378	76,511
Hai	2,386	1,681	7,585	2,877	17,516	4,522	224	302	7,006	44,098
Total	23,646	15,564	35,453	12,977	74,966	6,879	1,276	528	41,241	212,529

13.2d: AGRICULTURE CREDIT: Number of Credits Received By Main Purpose of Credit and District

District	Credit Use						
	Labour	Seeds	Fertilizers	Agro-chemicals	Tools / Equipment	Livestock	Other
Rombo	0	115	0	0	0	0	114
Mwanga	38	38	0	38	38	0	0
Same	208	283	420	205	0	73	68
Moshi Rural	0	0	114	0	114	67	201
Hai	500	1,449	1,105	711	0	249	113
Total Credits	746	1,885	1,639	954	152	390	496

TREE FARMING AND AGROFORESTRY

14.1: ON FARM TREE PLANTING: Number of Planted Trees By Species and District, Kilimanjaro Region

District	Senna Spp	Gravellia	Azalia Quanzensis	Acacia Spp	Pinus Spp	Eucalyptus Spp	Cyprus Spp	Calophyllum Inophyllum	Melicia excelsa	Casurina Equisetifolia	Tectona Grandis	Terminalia Catapa	Terminalia Ivorensis	Maesopsis Berchemoides	Leucena Spp
Rombo	113	4,480	192	5	79	19	1,268	4	2	.	.	29	7	21	.
Mwanga	1,228	5,910	91	839	37	15,045	27	.	.	1,000	155	4	.	.	.
Same	444	2,283	61	16	6	312	153	.	.	.	295	11	.	.	.
Moshi Rural	1,453	3,270	58	122	112	107	93	10	94	46	.	4	.	373	50
Hai	842	2,309	3	6	.	22	91	.	15	10	16	11	1	.	.
Total	4,080	18,252	405	988	234	15,505	1,632	14	111	1,056	466	59	8	394	50

Cont.....

Syzzygium Spp	Azadirachta Spp	Jakaranda Spp	Albizia Spp	Kyaya Spp	Sesbania Spp	Calliandra Spp	Moringa Spp	Saraca Spp	Trichilia Spp	Total
4	23	.	321	.	.	10	13	.	.	6,590
2	68	10	81	.	.	39	4	.	.	24,540
28	69	45	47	.	19	60	.	.	50	3,899
16	129	39	973	.	.	38	.	2	.	6,989
28	121	36	415	4	.	10	.	.	10	3,950
78	410	130	1,837	4	19	157	17	2	60	45,968

14.2 TREE FARMING: Number of Households with Planted Trees on their Land and and Number of Trees by Planting Location and District

District	Mostly on Field / Plot Boundaries		Mostly Scattered in Field		Mostly in Plantation / Coppice		Total	
	Number of Households	Number of Trees	Number of Households	Number of Trees	Number of Households	Number of Trees	Number of Households	Number of Trees
Rombo	238	4,390	72	2,200	0	.	310	6,590
Mwanga	112	4,288	70	4,108	35	16,034	217	24,430
Same	130	2,338	49	1,454	3	65	182	3,857
Moshi Rural	186	4,015	146	2,918	2	56	334	6,989
Hai	136	2,466	126	1,484	0	.	262	3,950
Total	802	17,497	463	12,164	40	16,155	1,305	45,816

14.3 TREE FARMING: Main Use of Trees By District

District	Main Use							Total
	Planks / Timber	Poles	Charcoal	Fuel for Wood	Shade	Medicinal	Other	
Rombo	343	34	0	21	28	5	11	442
Mwanga	168	15	2	95	25	1	0	306
Same	137	11	0	86	30	4	3	271
Moshi Rural	131	33	0	103	346	11	2	626
Hai	174	25	1	68	173	8	1	450
Total	953	118	3	373	602	29	17	2,095

14.4: TREE FARMING: Number of Households By Distance to Community Planted Forest (Km) By District

District	Distance to Community Planted Forest (km)						Total
	1-9	1-19	20-29	30-39	40-49	60+	
Mwanga	44	43	248	0	405	84	825
Same	220	368	945	370	516	370	2,789
Moshi Rural	1,034	587	644	265	929	133	3,592
Hai	1,117	1,754	1,480	587	118	0	5,056
Total	2,416	2,753	3,317	1,221	1,968	586	12,261

14: 5 TREE FARMING: Number of Responses by second use of Trees and District for 2002/03

District	Second Use							Total
	Planks / Timber	Poles	Charcoal	Fuel for Wood	Shade	Medicinal	Other	
Rombo	15	53	2	334	28	7	3	442
Mwanga	32	80	1	147	42	3	0	305
Same	40	44	1	124	42	9	2	262
Moshi Rural	77	79	2	357	89	19	3	626
Hai	32	86	2	235	82	6	7	450
Total	196	342	8	1,197	283	44	15	2,085

CROP EXTENSION

**15.1 CROP EXTENSION" Number of Households
Receiving Extension Messages By District**

District	Households Receiving Extension Advice		Households Not Receiving Extension Advice		Total
	Number	%	Number	%	
Rombo	27,900	59	19,114	41	47,014
Mwanga	9,094	54	7,654	46	16,749
Same	15,555	53	13,548	47	29,103
Moshi Rural	56,317	73	20,509	27	76,826
Hai	26,960	58	19,521	42	46,481
Total	135,826	63	80,346	37	216,173

15.2: CROP EXTENSION: Number of Households By Quality of Extension Messages by District during the 2002/03 Agricultural year, Kilimanjaro Region

District	Quality of service										Total
	Very Good		Good		Average		Poor		No Good		
	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	2,328	8	18,181	65	6,806	24	471	2	115	0	27,900
Mwanga	2,619	29	4,742	52	1,442	16	161	2	86	1	9,051
Same	2,166	14	11,442	76	1,143	8	221	1	141	1	15,113
Moshi Rural	10,588	19	28,479	51	13,044	23	3,552	6	0	0	55,663
Hai	7,642	28	12,380	46	6,121	23	567	2	126	0	26,835
Total	25,343	19	75,225	56	28,556	21	4,972	4	467	0	134,562

15.3: EXTENSION MESSAGES: Number of Households By Source of Extension Messages By District during the 2002/03 Agricultural Year, Kilimanjaro Region

District	Source of Crop Extension												Total
	Government		NGO / Development Project		Cooperative		Large Scale Farm		Other		Not applicable		
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	
Rombo	26,848	97	0	0	0	0	231	1	0	0	707	3	27,786
Mwanga	8,820	97	188	2	0	0	43	0	0	0	44	0	9,094
Same	12,928	84	1,785	12	0	0	74	0	74	0	549	4	15,410
Moshi Rural	54,585	98	138	0	271	0	0	0	0	0	922	2	55,916
Hai	25,794	97	462	2	245	1	125	0	0	0	0	0	26,626
Total	128,975	96	2,573	2	516	0	472	0	74	0	2,222	2	134,832

15.4: EXTENSION MESSAGES: Number of Households By Receiving Advice on Plant Spacing By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Spacing						Total
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable	
Rombo	26,613	0	0	231	0	707	27,552
Mwanga	8,533	188	0	0	0	44	8,765
Same	12,072	1,785	0	74	74	489	14,494
Moshi Rural	46,313	138	271	0	0	407	47,129
Hai	24,768	462	245	125	0	0	25,600
Total	118,299	2,573	516	430	74	1,648	123,539

15.5: EXTENSION MESSAGES: Number of Households By Receiving Advice on the Use of Agro-chemicals By Source of Messages By District Kilimanjaro Region

District	Use of Agrochemicals						Total
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable	
Rombo	19,554	236	117	116	118	2,937	23,078
Mwanga	6,003	474	44	0	43	637	7,201
Same	7,668	2,333	0	68	0	1,251	11,320
Moshi Rural	30,633	136	263	125	0	1,747	32,903
Hai	15,611	855	0	0	0	352	16,818
Total	79,469	4,033	423	309	161	6,924	91,319

15.6: EXTENSION MESSAGES: Number of Households By Receiving Advice on the Erosion Control By Source of Messages By District Kilimanjaro Region

District	Erosion Control				Total
	Government	NGO / Development Project	Large Scale Farm	Not applicable	
Rombo	22,856	116	352	2,580	25,904
Mwanga	4,963	1,735	0	917	7,614
Same	8,680	3,222	68	740	12,709
Moshi Rural	30,136	638	0	1,081	31,856
Hai	11,930	688	0	1,280	13,897
Total	78,565	6,398	420	6,597	91,981

15.7: EXTENSION MESSAGES: Number of Households By Receiving Advice on the use of Organic Fertilisers By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Organic Fertilizer Use					Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Not applicable				
Rombo	23,564	235	236	1,530		25,565	34,155	75
Mwanga	6,717	632	0	670		8,018	13,806	58
Same	10,688	1,964	0	813		13,465	21,769	62
Moshi Rural	40,900	277	357	538		42,071	53,763	78
Hai	15,951	847	0	440		17,237	41,225	42
Total	97,819	3,955	593	3,991		106,358	164,718	65

15.8: EXTENSION MESSAGES: Number of Households By Receiving Advice on the use of Inorganic Fertilisers By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Inorganic Fertilizer Use					Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Not applicable			
Rombo	15,331	234	236	0	3,982	19,783	34,155	58
Mwanga	4,867	614	0	0		6,787	13,806	49
Same	6,174	1,818	0	0	1,607	9,599	21,769	44
Moshi Rural	34,319	0	125	0	2,361	36,805	53,763	68
Hai	18,781	487	343	125	241	19,976	41,225	48
Total	79,473	3,152	704	125	9,497	92,951	164,718	56

15.9: EXTENSION MESSAGES: Number of Households By Receiving Advice on the use of Improved seeds By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Use of Improved Seed					Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Not applicable			
Rombo	24,267	0	116	0	1,526	25,908	34,155	76
Mwanga	8,049	302	0	0	243	8,594	13,806	62
Same	9,129	3,295	0	71	833	13,329	21,769	61
Moshi Rural	45,747	269	138	0	814	46,968	53,763	87
Hai	20,118	949	1,007	0	425	22,499	41,225	55
Total	107,310	4,815	1,261	71	3,840	117,298	164,718	71

15.10: EXTENSION MESSAGES: Number of Households By Receiving Advice on the use of Mechanisation By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Mechanisation / LST							Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable	Total			
Rombo	3,300	465	1,415	0	0	8,267	13,447	34,155	39	
Mwanga	1,760	449	43	40	0	1,913	4,205	13,806	30	
Same	2,765	1,243	0	74	0	1,411	5,494	21,769	25	
Moshi Rural	15,173	264	510	0	0	1,077	17,025	53,763	32	
Hai	10,096	214	1,505	0	119	428	12,361	41,225	30	
Total	33,095	2,636	3,473	114	119	13,096	52,532	164,718	32	

15.11: EXTENSION MESSAGES: Number of Households By Receiving Advice on the use of Irrigation Technology By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Irrigation Technology							Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable	Total			
Rombo	353	117	0	354	0	11,323	12,147	34,155	36	
Mwanga	2,753	2,120	0	85	0	759	5,717	13,806	41	
Same	6,303	3,042	74	142	67	1,123	10,751	21,769	49	
Moshi Rural	20,301	278	174	87	0	1,441	22,282	53,763	41	
Hai	13,054	338	118	0	125	429	14,064	41,225	34	
Total	42,764	5,896	366	668	191	15,076	64,962	164,718	39	

15.12: EXTENSION MESSAGES: Number of Households By Receiving Advice on the use of use of Crop storage By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Crop Storage							Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable	Total			
Rombo	21,220	0	116	232	0	2,229	23,797	34,155	70	
Mwanga	6,663	346	0	43	0	759	7,810	13,806	57	
Same	8,595	1,879	0	0	74	1,332	11,881	21,769	55	
Moshi Rural	34,007	138	212	0	0	540	34,897	53,763	65	
Hai	18,396	821	225	0	125	496	20,064	41,225	49	
Total	88,882	3,184	553	275	199	5,356	98,449	164,718	60	

15.13: EXTENSION MESSAGES: Number of Households By Receiving Advice on vermin control By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Vermin Control							Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable				
Rombo	8,113	114	0	0	236	9,108	17,571	34,155	51	
Mwanga	3,997	113	0	43	0	1,430	5,583	13,806	40	
Same	5,017	1,245	0	0	288	1,389	7,940	21,769	36	
Moshi Rural	10,816	264	87	136	0	906	12,209	53,763	23	
Hai	10,120	0	125	377	126	599	11,347	41,225	28	
Total	38,064	1,737	212	555	650	13,432	54,650	164,718	33	

15.14: EXTENSION MESSAGES: Number of Households By Receiving Advice on Agro-processing By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Agro-progressing							Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable				
Rombo	14,097	471	707	350	354	6,292	22,271	34,155	65	
Mwanga	3,883	175	0	83	0	1,748	5,889	13,806	43	
Same	6,293	2,256	72	74	148	1,677	10,520	21,769	48	
Moshi Rural	15,401	139	125	135	139	1,408	17,346	53,763	32	
Hai	13,046	235	235	238	119	440	14,314	41,225	35	
Total	52,720	3,277	1,139	880	759	11,565	70,341	164,718	43	

15.15: EXTENSION MESSAGES: Number of Households By Receiving Advice on Agro-Forestry By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Agro-forestry							Total	Total Number of Households	% of total number of households
	Government	NGO / Development Project	Cooperative	Large Scale Farm	Other	Not applicable				
Rombo	12,454	0	354	118	118	8,991	22,035	34,155	65	
Mwanga	4,398	1,005	0	40	43	1,552	7,037	13,806	51	
Same	7,010	2,715	72	74	73	1,248	11,192	21,769	51	
Moshi Rural	22,671	541	131	0	0	395	23,737	53,763	44	
Hai	11,816	331	0	235	119	671	13,172	41,225	32	
Total	58,349	4,592	557	467	352	12,856	77,174	164,718	47	

15.16: EXTENSION MESSAGES: Number of Households By Receiving Advice on Beekeeping By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Beekeeping						
	Government	NGO / Development Project	Large Scale Farm	Not applicable	Total	Total Number of Households	% of total number of households
Rombo	118	0	116	11,795	12,029	34,155	35
Mwanga	477	363	40	2,546	3,425	13,806	25
Same	665	2,357	0	1,685	4,706	21,769	22
Moshi Rural	1,312	132	0	770	2,214	53,763	4
Hai	1,468	501	126	191	2,286	41,225	6
Total	4,039	4,040	281	16,987	24,660	164,718	15
%	16	16	1	69	100		

15.17: EXTENSION MESSAGES: Number of Households By Receiving Advice on Fish Farming By Source of Messages By District during 2002/03 agricultural year, Kilimanjaro Region.

District	Fish Farming						
	Government	NGO / Development Project	Large Scale Farm	Not applicable	Total	Total Number of Households	% of total number of households
Rombo	590	0	0	11,911	12,501	34,155	37
Mwanga	306	463	80	2,376	3,225	13,806	23
Same	364	3,463	0	1,391	5,218	21,769	24
Moshi Rural	2,979	258	0	632	3,869	53,763	7
Hai	879	251	0	191	1,320	41,225	3
Total	5,118	4,434	80	16,502	26,133	164,718	16

15.18: CROP EXTENSION" Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 1) During the 2002/03 Agricultural Year, Kilimanjaro Region.

District	Spacing			Use of Agrochemicals			Erosion Control		
	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%
Rombo	26,844	23,935	89	20,024	14,178	71	22,500	18,396	82
Mwanga	8,678	8,257	95	6,485	3,945	61	6,619	4,907	74
Same	14,079	13,560	96	10,061	6,380	63	11,970	9,904	83
Moshi Rural	46,726	44,001	94	33,484	21,546	64	30,755	24,981	81
Hai	25,600	24,272	95	17,059	12,130	71	13,110	9,113	70
Total	121,927	114,025	94	87,112	58,180	67	84,954	67,300	79

15.19: CROP EXTENSION" Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 2) During the 2002/03 Agricultural Year, Kilimanjaro Region.

District	Organic Fertilizer Use			Inorganic Fertilizer Use			Use of Improved Seed		
	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%
Rombo	23,799	22,739	96	15,329	3,506	23	24,383	18,769	77
Mwanga	7,318	6,256	85	5,321	2,380	45	8,308	5,444	66
Same	12,652	11,107	88	7,679	3,586	47	12,485	9,448	76
Moshi Rural	42,072	39,049	93	36,452	27,675	76	46,189	40,541	88
Hai	17,164	14,684	86	19,859	14,683	74	22,625	18,509	82
Total	103,005	93,835	91	84,640	51,831	61	113,989	92,711	81

15.20: CROP EXTENSION" Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 3) During the 2002/03 Agricultural Year, Kilimanjaro Region.

District	Mechanisation / LST			Organic Fertilizer Use			Irrigation Technology		
	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%
Rombo	3,890	354	9	23,799	22,739	96	471	0	0
Mwanga	2,049	904	44	7,318	6,256	85	4,819	3,211	67
Same	3,343	2,030	61	12,652	11,107	88	9,487	7,268	77
Moshi Rural	15,967	13,433	84	42,072	39,049	93	19,122	14,172	74
Hai	12,046	8,320	69	17,164	14,684	86	13,797	8,956	65
Total	37,295	25,041	67	103,005	93,835	91	47,696	33,607	70

15.20: CROP EXTENSION" Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 3) During the 2002/03 Agricultural Year, Kilimanjaro Region.

District	Crop Storage			Vermin Control			Agro-progressing		
	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%
Rombo	21,686	15,937	73	8,584	6,470	75	15,976	15,509	97
Mwanga	7,048	6,343	90	4,152	3,665	88	4,143	4,132	100
Same	10,622	8,782	83	6,113	5,443	89	8,695	7,885	91
Moshi Rural	35,044	32,384	92	11,041	9,029	82	15,592	14,905	96
Hai	19,806	18,188	92	11,190	8,967	80	13,758	12,145	88
Total	94,207	81,634	87	41,080	33,575	82	58,165	54,575	94

15.20: CROP EXTENSION" Number of Households Receiving and Adapting Extension Messages by Type of Message and (Part 5 During the 2002/03 Agricultural Year, Rukwa Region.

District	Agro-forestry			Beekeeping			Fish Farming		
	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%	Received Advice	Adopted Message	%
Rombo	13,397	12,336	92	0	0	0	0	0	
Mwanga	5,450	4,119	76	794	215	27	635	85	13
Same	10,092	7,749	77	2,725	1,402	51	3,901	1,175	30
Moshi Rural	24,023	17,930	75	936	268	29	2,852	2,862	100
Hai	12,984	9,351	72	2,333	1,467	63	1,255	251	20
Total	65,947	51,485	78	6,789	3,352	49	8,643	4,373	51

ANIMAL CONTRIBUTION TO CROP PRODUCTION

17.1 ANIMAL CONTRIBUTION TO CROP PRODUCTION: Number of Households Using Draft Animal to Cultivate Land By District

District	Households Using Draft Animals		Household Not Using Draft Animals		Total Households
	Number	%	Number	%	Number
Rombo	103	0.2	46,911	99.8	47,014
Mwanga	1,238	7.4	15,511	92.6	16,749
Same	142	0.5	28,961	99.5	29,103
Moshi Rural	1,357	1.8	75,468	98.2	76,826
Hai	7,710	16.6	38,771	83.4	46,481
Total	10,551	4.9	205,622	95.1	216,173

17.2 ANIMAL CONTRIBUTION TO CROP PRODUCTION: Type of Draft By Number Owned, Used and Area Cultivated (Acres) By District During 2002/03 Agriculture Year

District	Type of Craft														
	Oxen			Bulls			Cows			Donkeys			Total		
	Number Owned	Number Used	Area Cultivated (Hectares)	Number Owned	Number Used	Area Cultivated (Hectares)	Number Owned	Number Used	Area Cultivated (Hectares)	Number Owned	Number Used	Area Cultivated (Hectares)	Number Owned	Number Used	Area Cultivated (Hectares)
Rombo	0	206	83	0	206	83
Mwanga	435	2,465	825	0	0	0	87	0	0	0	0	0	522	2,465	825
Same	216	285	175	216	285	175
Moshi Rural	523	4,207	1,079	0	0	88	523	4,207	1,167
Hai	10,584	15,393	7,825	472	694	92	0	0	0	125	317	83	11,181	16,403	8,001
Total	11,759	22,555	9,987	472	694	180	87	0	0	125	317	83	12,443	23,565	10,251

17.3 ANIMAL CONTRIBUTION TO CROPS: Number of Crop Growing Households Using Organic Fertilizer By Regio During 2002/03 Agriculture Year

District	Did you apply organic fertilizer during 2002/03?				
	Using Organic Fertilizer		Not Using Organic Fertilizer		Total
	Number	%	Number	%	Number
Rombo	42,348	28	4,548	7	46,896
Mwanga	11,563	8	5,099	8	16,662
Same	17,564	12	11,245	18	28,809
Moshi Rural	52,208	35	23,956	38	76,165
Hai	26,826	18	18,932	30	45,758
Total	150,510	100	63,781	100	214,291

17.4 ANIMAL CONTRIBUTION TO CROPS: Area of Farm Yard Manure and Compost Application By District During 2002/03 Agriculture Year

District	Farm Yard Manure Area Applied		Compost Area Applied		Total	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
	Rombo	17,923	25	375	6	18,298
Mwanga	5,440	8	338	6	5,778	7
Same	6,294	9	4,354	75	10,647	14
Moshi Rural	30,347	42	535	9	30,882	39
Hai	12,491	17	170	3	12,661	16
Total	72,495	100	5,772	100	78,267	100

CATTLE PRODUCTION

18.1a CATTLE PRODUCTION: Total Number of Households Rearing Cattle By District During 2002/03 Agriculture Year

District	Households Rearing Cattle		Households Not Rearing Cattle		Total Agricultural Households	
	Number	%	Number	%	Number	%
Rombo	24,830	53	22,184	47	47,014	100
Mwanga	11,591	69	5,158	31	16,749	100
Same	14,697	50	14,406	50	29,103	100
Moshi Rural	48,912	64	27,913	36	76,826	100
Hai	28,455	61	18,027	39	46,481	100
Total	128,484	59	87,688	41	216,173	100

18.3b: CATTLE PRODUCTION: Number of Households Rearing Cattle, Head of Cattle and Average Head per Household by Herd Size as of 2002/03

District	Herd Size	Number of Household		Number of Cattle		Average Number Per Household
		Number	%	Number	%	
Rombo	1-5	24,596	99	42,478	97	2
	6-10	234	1	1,402	3	6
	Total	24,830	100	43,880	100	2
Mwanga	1-5	9,978	86	24,513	47	2
	6-10	769	7	5,703	11	7
	11-15	233	2	3,291	6	14
	16-20	191	2	3,514	7	18
	21-30	226	2	5,772	11	26
	31-40	81	1	2,672	5	33
	41-50	78	1	3,825	7	49
	61-100	35	0	2,680	5	77
	Total	11,591	100	51,971	100	4
Same	1-5	12,529	85	28,271	35	2
	6-10	928	6	7,024	9	8
	11-15	357	2	4,705	6	13
	16-20	141	1	2,531	3	18
	21-30	340	2	7,601	10	22
	31-40	68	0	2,729	3	40
	51-60	67	0	3,460	4	52
	61-100	207	1	14,604	18	70
	101-150	60	0	8,837	11	148
Total	14,697	100	79,761	100	5	
Moshi Rural	1-5	45,013	92	97,663	75	2
	6-10	3,306	7	23,519	18	7
	11-15	340	1	4,267	3	13
	21-30	253	1	5,564	4	22
	Total	48,912	100	131,013	100	3
Hai	1-5	25,005	88	56,639	30	2
	6-10	2,164	8	15,999	9	7
	11-15	325	1	3,904	2	12
	16-20	220	1	3,920	2	18
	21-30	430	2	11,195	6	26
	31-40	101	0	3,944	2	39
	61-100	107	0	10,715	6	100
	151+	101	0	81,616	43	807
	Total	28,455	100	187,930	100	7

**18.4c CATTLE PRODUCTION: Number of Cattle by Category and Type of Cattle
as of 1st October 2003**

District	Indigenous		Improved Beef		Improved Dairy		Total Cattle	
	Number of Cattle	%	Number of Cattle	%	Number of Cattle	%	Number of Cattle	%
Rombo	13,995	32	235	1	29,651	68	43,880	9
Mwanga	35,941	69	428	1	15,602	30	51,971	11
Same	72,911	91	147	0	6,703	8	79,761	16
Moshi Rural	84,674	65	3,784	3	42,556	32	131,013	26
Hai	143,670	76	860	0	43,399	23	187,930	38
Total	351,191	71	5,454	1	137,910	28	494,555	100

18.2: CATTLE PRODUCTION: Number of Cattle By Type and District as of 1st October, 2003

District	Indigenous			Improved Beef			Improved Dairy			Total Cattle		
	Number of Households	Number of Cattle	%	Number of Households	Number of Cattle	%	Number of Households	Number of Cattle	%	Number of Households	Number of Cattle	%
Rombo	8,848	13,995	31.9	235	235	1	16,335	29,651	68	24,830	43,880	9
Mwanga	5,659	35,941	69.2	214	428	1	6,143	15,602	30	11,591	51,971	11
Same	12,736	72,911	91.4	147	147	0	2,989	6,703	8	14,697	79,761	16
Moshi Rural	31,428	84,674	64.6	2,372	3,784	3	18,521	42,556	32	48,912	131,013	26
Hai	10,884	143,670	76.4	489	860	0	18,263	43,399	23	28,455	187,930	38
Total	69,554	351,191	71.0	3,457	5,454	1	62,252	137,910	28	128,484	494,555	100

18.3: CATTLE PRODUCTION: Number of Indigenous Cattle By Category and as of 1st October, 2003

District	Category - Indigenous						
	Bulls	Cows	Steers	Heifers	Male Calves	Female Calves	Total
Rombo	2,312	5,857	234	2,657	1,292	1,644	13,995
Mwanga	3,309	16,083	1,233	5,966	4,598	4,752	35,941
Same	6,979	39,187	2,777	10,004	6,408	7,556	72,911
Moshi Rural	10,406	33,692	964	13,667	13,350	12,594	84,674
Hai	7,117	65,483	10,918	28,324	12,157	19,672	143,670
Total	30,122	160,302	16,126	60,617	37,807	46,217	351,191

18.4: CATTLE PRODUCTION: Number of Indigenous Cattle By Category and as of 1st October, 2003

District	Category - Improved Dairy Cattle						
	Bulls	Cows	Steers	Heifers	Male Calves	Female Calves	Total
Rombo	3,008	12,422	455	7,058	4,082	2,625	29,651
Mwanga	1,111	6,908		2,984	2,202	2,397	15,602
Same	812	2,848		1,742	719	582	6,703
Moshi Rural	6,067	20,023	353	5,361	4,170	6,580	42,556
Hai	5,000	20,063	251	6,813	6,084	5,188	43,399
Total	15,999	62,264	1,059	23,958	17,258	17,373	137,910

GOAT PRODUCTION

19.1: GOAT PRODUCTION: Total Number of Goats by Type and District as of 2st October, 2003

District	Indigenous			Improved for Meat			Improved Dairy			Total Goat	
	Number of Households	Number of Goat	%	Number of Households	Number of Goat	%	Number of Households	Number of Goat	%	Number of Households	Number of Goat
Rombo	39,586	176,044	89	1,154	10,515	5	1,519	11,523	6	40,053	198,082
Mwanga	4,102	44,541	93	179	2,157	5	243	1,052	2	4,144	47,751
Same	7,322	52,785	95	71	71	0	434	2,705	5	7,536	55,561
Moshi Rural	36,591	160,072	95	1,469	4,525	3	1,326	3,509	2	37,503	168,107
Hai	12,421	93,776	91	243	957	1	1,698	8,344	8	13,780	103,077
Total	100,022	527,218	92	3,117	18,226	3	5,220	27,133	5	103,017	572,577

19.2: GOAT PRODUCTION: Number of Households Rearing Goats, Herd of Goats and Average Head per Household by Herd Size as of 1st

Herd Size	Number of Household	%	Number of Goat	%	Average Number Per Household
1-4	61,883	60	158,590	28	3
5-9	31,185	30	196,579	34	6
10-14	5,492	5	62,027	11	11
15-19	1,135	1	18,589	3	16
20-24	1,124	1	24,185	4	22
25-29	325	0	8,771	2	27
30-39	817	1	26,213	5	32
40+	1,057	1	77,623	14	73
Total	103,017	100	572,577	100	6

19.:3 GOAT PRODUCTION: Total Number of Goats by Category and Type of Goat as of 1st October, 2003 and District

Category of Goats	Number of Indigenous		Number of Improved for Meat		Number of Improved Dairy		Total Goat	
	Number	%	Number	%	Number	%	Number	%
Billy Goat	72,524	87	8,075	10	2,896	3	83,495	15
Castrated Goat	18,701	77	1,243	5	4,490	18	24,434	4
She Goat	292,876	96	5,811	2	7,822	3	306,509	54
Male Kid	65,669	95	1,150	2	2,223	3	69,043	12
She Kid	77,448	87	1,947	2	9,703	11	89,097	16
Total	527,218	92	18,226	3	27,133	5	572,577	100

19.4 GOAT PRODUCTION: Number of Indigenous Goat by Category and District as of 1st October, 2003

District	Type					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Rombo	21,311	4,064	96,216	23,145	31,307	176,044
Mwanga	7,926	1,524	23,815	5,168	6,108	44,541
Same	8,936	2,888	30,419	4,587	5,955	52,785
Moshi Rural	23,613	5,118	91,260	19,255	20,826	160,072
Hai	10,738	5,106	51,166	13,513	13,253	93,776
Total	72,524	18,701	292,876	65,669	77,448	527,218

19.5: GOAT PRODUCTION: Number of Improved Meat Goat by Category and District as of 1st October, 2003

District	Number of Improved for Meat					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Rombo	7,082	617	2,121	118	578	10,515
Mwanga	606	35	1,168	209	139	2,157
Same	.	71	.	.	.	71
Moshi Rural	261	394	2,522	824	524	4,525
Hai	126	126	.	.	706	957
Total	8,075	1,243	5,811	1,150	1,947	18,226

19.6 GOAT PRODUCTION: Number of Improved Dairy Goat by Category and District as of 1st October, 2003

District	Number of Improved Dairy					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Rombo	585	707	2,334	470	7,427	11,523
Mwanga	84	216	128	287	337	1,052
Same	511		1,172	581	441	2,705
Moshi Rural	121	805	1,698	132	753	3,509
Hai	1,594	2,762	2,489	754	745	8,344
Total	2,896	4,490	7,822	2,223	9,703	27,133

19.7 GOAT PRODUCTION: Number of Total Goat by Category and District as of 1st October, 2003

District	Total Goat					
	Billy Goat	Castrated Goat	She Goat	Male Kid	She Kid	Total
Rombo	28,978	5,389	100,671	23,733	39,311	198,082
Mwanga	8,616	1,775	25,111	5,664	6,584	47,751
Same	9,447	2,960	31,591	5,168	6,395	55,561
Moshi Rural	23,996	6,317	95,481	20,211	22,103	168,107
Hai	12,458	7,993	53,655	14,267	14,704	103,077
Total	83,495	24,434	306,509	69,043	89,097	572,577

SHEEP PRODUCTION

20.1: SHEEP PRODUCTION: Total Number of Sheep By Breed Type During the 2002/03 Agriculture Year

Breed	Number of Indigenous		Number of Improved for Mutton		Total Sheep	
	Number	%	Number	%	Number	%
Ram	38,598	44	1,709	4	40,307	16
Castrated St	17,547	95	970	5	18,517	7
She Sheep	132,358	22	3,279	2	135,637	53
Male Lamb	29,989	91	2,159	7	32,149	12
She Lamb	29,248	95	1,402	5	30,650	12
Total	247,740	96	9,520	4	257,260	100

20.2: SHEEP PRODUCTION: Number of Households Rearing Sheep by District as of 1st October, 2002/03 Agriculture Year

District	Households Raising Sheep		Households Not Raising Sheep		Total Number of Households	Total Livestock Keeping Households
	Number	%	Number	%		
Rombo	21,119	45	25,895	55	47,014	21,119
Mwanga	3,957	24	12,792	76	16,749	3,957
Same	9,378	32	19,725	68	29,103	9,378
Moshi Rural	17,044	22	59,782	78	76,826	17,044
Hai	12,198	26	34,283	74	46,481	12,198
Total	63,696	29	152,477	71	216,173	63,696

20.3 SHEEP PRODUCTION: Number of Sheep by Type of Sheep and District as of 1st October, 2002/03

District	Number of Indigenous		Number of Improved for Mutton		Total Sheep	
	Number	%	Number	%	Number	%
Rombo	68,769	97	2,136	3	70,905	28
Mwanga	18,025	94	1,223	6	19,248	7
Same	40,752	96	1,704	4	42,457	17
Moshi Rural	55,138	96	2,018	4	57,156	22
Hai	65,055	96	2,439	4	67,494	26
Total	247,740	96	9,520	4	257,260	100

20.4: Number of Sheep per Household by Category and district as of 1st October 2003.

District	Number of Indigenous		Number of Improved for Mutton		Total Households Raising Sheep	Average Sheep
	Number of Households	Average Sheep	Number of Households	Average Sheep		
Rombo	38,598	2	1,709	8	21,119	3
Mwanga	17,547	4	970	25	3,957	5
Same	132,358	14	3,279	35	9,378	5
Moshi Rural	29,989	2	2,159	13	17,044	3
Hai	29,248	2	1,402	11	12,198	6
Total	247,740	4	9,520	15	63,696	4

20.5: Number of Households and Heads of Sheep by Herd Size on 1st October 2003

Herd Size	Number of Household	%	Number of Sheep	%	Average Number Per Household
1-4	49,983	79	115,089	45	2
5-9	9,482	15	58,542	23	6
10-14	1,625	3	19,838	8	12
15-19	785	1	13,398	5	17
20-24	610	1	12,949	5	21
25-29	67	0	1,664	1	25
30-39	103	0	3,227	1	31
40+	468	1	32,555	13	70
Total	63,122	100	257,260	100	4

20.6 SHEEP PRODUCTION: Number of Indigenous Sheep by Category of Sheep and District as of 1st October, 2002/03 Agriculture Year

District	Number of Indigenous					Total Number of Indigenous
	Ram	Castrated Sheep	She Sheep	Male Lamb	She Lamb	
Rombo	11,739	4,453	36,249	8,344	7,984	68,769
Mwanga	2,606	932	9,672	2,080	2,734	18,025
Same	7,124	3,007	20,959	4,380	5,282	40,752
Moshi Rural	7,390	2,313	31,715	6,908	6,811	55,138
Hai	9,738	6,841	33,762	8,278	6,436	65,055
Total	38,598	17,547	132,358	29,989	29,248	247,740

20.7 SHEEP PRODUCTION: Total Number of Sheep by Category of Sheep and District as of 1st October, 2002/03 Agriculture Year

District	Total Sheep					Total Sheep
	Ram	Castrated Sheep	She Sheep	Male Lamb	She Lamb	
Rombo	11,857	4,453	37,185	9,426	7,984	70,905
Mwanga	2,869	932	9,672	2,474	3,300	19,248
Same	7,929	3,150	21,435	4,523	5,420	42,457
Moshi Rural	7,390	3,141	32,102	7,448	7,076	57,156
Hai	10,262	6,841	35,243	8,278	6,870	67,494
Total	40,307	18,517	135,637	32,149	30,650	257,260

PIGS PRODUCTION

21.3.1 PIG PRODUCTION: Number of Households Rearing Pigs, Herd of Pigs and Average Head of per Household by Herd Size as of 1st October, 2003

Herd Size	Number of Household		Number of Pig		Average Number Per Household
	Number	%	Number	%	
1-4	25,688	78	49,711	43	2
5-9	4,287	13	28,740	25	7
10-14	1,820	6	20,441	17	11
15-19	197	1	3,226	3	16
20-24	377	1	7,536	6	20
25-29	118	0	3,061	3	26
40+	358	1	4,161	4	12
Total	32,844	100	116,877	100	4

21.2 PIG PRODUCTION: Number of Households Raising Pig by District during 2002/03 Agriculture Year

District	Number of Household	Number of Pig	Average Number Per Household
Rombo	11,531	23,872	2
Mwanga	87	131	1
Same	1,919	5,317	3
Moshi Rural	14,775	65,761	4
Hai	4,531	21,796	5
Total	32,844	116,877	4

21.3 PIG POPULATION: Total Number of Pigs by Category of Pigs and District as of 1st October, 2003

District	Pigs Type					Total
	Boar	Castrated Male	Sow / Gilt	Male Piglet	She Piglet	
Rombo	5,008	4,055	9,608	2,231	2,969	23,872
Mwanga	44	.	87	.	.	131
Same	1,180	148	2,508	592	889	5,317
Moshi Rural	8,305	6,345	22,222	13,789	15,100	65,761
Hai	2,825	1,495	6,168	4,709	6,599	21,796
Total	17,362	12,043	40,594	21,322	25,556	116,877

LIVESTOCK PESTS AND PARASITE CONTROL

22.1 LIVESTOCK PESTS AND PARASITE CONTROL: Number and Percent of agricultural households reporting to have dewormed livestock during 2002/03 Agriculture Year by District.

District	No. of Agricultural Households Demworming livestock		No. of Agricultural Households NOT Demworming livestock		Total
	Number	%	Number	%	
Rombo	23,493	63	13,984	37	37,477
Mwanga	8,890	75	3,009	25	11,899
Same	12,011	65	6,421	35	18,433
Moshi Rur	41,931	75	13,833	25	55,764
Hai	24,928	77	7,428	23	32,357
Total	111,253	71	44,676	29	155,929

22.2 LIVESTOCK PESTS AND PARASITE CONTROL: Number and Percent of agricultural households reporting to have dewormed livestock during 2002/03 Agriculture Year by District and type of dewormed Livestock

District	Dewormed Goats		Dewormed Cattles		Dewormed Sheep		Dewormed Pigs	
	Number	%	Number	%	Number	%	Number	%
Rombo	17,442	30	14,179	15	8,605	24	8,075	34
Mwanga	3,259	6	7,843	9	2,191	6	517	2
Same	4,256	7	9,890	11	5,758	16	1,466	6
Moshi Rur	21,599	38	37,223	40	9,680	27	10,540	44
Hai	10,938	19	22,963	25	9,900	27	3,289	14
Total	57,495	100	92,099	100	36,134	100	23,886	100

22.5 LIVESTOCK PESTS AND PARASITE CONTROL: Number and Percent of agricultural households reporting to have encountered tsetse flies problems during 2002/03 Agriculture Year by District.

District	Tsetse Flies Problems		NO Tsetse Flies Problems		Total No. of Households
	Number	% age	Number	% age	
Rombo	580	2	35,977	98	36,556
Mwanga	1,607	13	10,506	87	12,113
Same	2,895	16	15,466	84	18,361
Moshi Rur	4,701	9	50,475	91	55,176
Hai	6,791	22	24,027	78	30,819
Total	16,575	11	136,451	89	153,026

22.6 LIVESTOCK PESTS AND PARASITE CONTROL: Number and Percent of agricultural households by Method of Tsetse flies Control during 2002/03 Agriculture Year and District.

District	Method of Tsetse Flies Control								Total No. of Households
	None		Spray		Dipping		Trapping		
	No. of Households	% age	No. of Households	% age	No. of Households	% age	No. of Households	% age	
Rombo	347	60	115	20	118	20	0	0	580
Mwanga	1,071	67	455	28	81	5	0	0	1,607
Same	1,254	43	1,201	41	366	13	0	0	2,895
Moshi Rur	1,598	34	2,965	63	0	0	138	3	4,701
Hai	1,653	24	4,545	67	0	0	476	7	6,791
Total	5,923	36	9,281	56	565	3	614	4	16,575

OTHER LIVESTOCK

23a: OTHER LIVESTOCK: Total number of Other Livestock by Type as of 1st October 2003

Type	Chicken		Others	
	Number	%	Type	Number
Indigenous Chicken	1,356,781	87	Ducks	42,319
Layer	168,203	11	Turkeys	3,194
Broiler	36,355	2	Rabbits	36,929
		0	Donkeys	16,190
Total	1,561,340	100		98,632

23b: OTHER LIVESTOCK: Number of Households Rearing and number of Other Livestock by Type and District

District	Type of Livestock				
	Ducks	Turkeys	Rabbits	Donkeys	Other
Rombo	10,664	.	1,715	8,254	.
Mwanga	4,326	1,079	23,405	.	173
Same	1,383	.	148	2,910	296
Moshi Rural	23,551	2,115	7,154	.	1,044
Hai	2,396	.	4,505	5,026	2,245
Total	42,319	3,194	36,929	16,190	3,758

23c: OTHER LIVESTOCK: Number of households with chicken and Category of Chicken by Flock Size

Flock Size	Chicken rearing Households		Number of chicken	Average chicken per household
	Number	%		
1 - 4	54,867	35	149,240	3
5 - 9	48,974	31	315,494	6
10 - 19	37,959	24	479,707	13
20 - 29	8,939	6	195,077	22
30 - 39	2,059	1	66,695	32
40 - 49	1,174	1	48,928	42
50 - 99	1,108	1	62,696	57
100+	507	0	38,944	77
Total	155,587	100	1,356,781	9

FISH FARMING

28.1 FISH FARMING: Number of Agricultural Households involved in Fish Farming and District, 2002/03 Agricultural Year

District	Was fish farming carried out by this household during 2002/03?				
	Yes		NO		Total
	Number	%	Number	%	
Rombo	0	0	47,014	100	47,014
Mwanga	336	2	16,413	98	16,749
Same	291	1	28,812	99	29,103
Moshi Rur	135	0	76,691	100	76,826
Hai	371	1	46,110	99	46,481
Total	1,132	1	215,041	99	216,173

28.2 FISH FARMING: Number of Agricultural Households By System of Farming and District, 2002/03 Agricultural Year

District	Fish Farming System		
	Dug out Pond	Natural Lake	Total
Mwanga	421	40	461
Same	367	0	367
Hai	371	0	371
Total	1,160	40	1,200

28.3 FISH FARMING: Number of Agricultural Households By Source of Fingerings and District, 2002/03 Agricultural Year

District	Source of Fingerling				Total
	NGOs / Project	Neighbour	Private Trader	Other	
Mwanga	213	165	44	40	461
Same	296	71	0	0	367
Hai	246	125	0	0	371
Total	755	361	44	40	1,200

28.4 FISH FARMING: Number of Agricultural Households By Location of Selling Fish and District, 2002/03 Agricultural Year

District	Where sold					Total
	Neighbour	Local Market	Trader at Farm	Did not Sell	Other	
	Number	Number	Number	Number	Number	
Mwanga	210	0	40	211	0	461
Same	219	217	74	0	0	510
Moshi Rur	135	0	0	269	0	404
Hai	0	0	0	0	246	246
Total	564	217	114	480	246	1,621

28.5 FISH FARMING: Total Number of Fish Harvested by Type and District, 2002/03 Agricultural Year

District	Number of Tilapia	Number of Carp	Number of Others
Mwanga	52,821	0	0
Same	99,412	0	0
Moshi Rural	0	0	0
Hai	3,233	1,231	1,231
Total	155,466	1,231	1,231

LIVESTOCK EXTENSION

29.1a: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Advice By Type of Service Provider and District, 2002/03 Agricultural Year

District	Number of Agricultural Households Receiving Advice		Number of Agricultural Households NOT Receiving Advice		Total	Total Number of households raising livestock	%
	Number	%	Number	%	Number		
Rombo	21,425	46	25,590	54	47,014	37,949	56
Mwanga	7,051	42	9,698	58	16,749	12,792	55
Same	11,419	39	17,684	61	29,103	18,506	62
Moshi Rural	39,381	51	37,445	49	76,826	56,368	70
Hai	21,085	45	25,397	55	46,481	32,839	64
Total	100,360	46	115,813	54	216,173	158,453	63

29.1b: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Calf Rearing By Source and District, 2002/03 Agricultural Year

District	Source of Advice						Total
	Government	NGO / Development Project	Co-operative	Large Scale Farmer	Other	not applicable	
Rombo	7,735	0	0	0	0	236	7,971
Mwanga	4,333	284	0	85	0	0	4,702
Same	5,146	1,324	0	0	71	74	6,615
Moshi Rural	21,199	0	0	0	0	139	21,337
Hai	12,111	119	118	0	126	0	12,473
Total	50,525	1,726	118	85	197	449	53,099

29.1c: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Proper Milking By Source and District, 2002/03 Agricultural Year

District	Source of Advice on Proper Milking			Total
	Government	NGO / Development Project	Large Scale Farmer	
Rombo	6,678	0	0	6,678
Mwanga	3,388	156	43	3,587
Same	4,057	1,251	0	5,307
Moshi Rural	14,587	138	0	14,725
Hai	10,435	598	125	11,157
Total	39,144	2,142	168	41,454

29.1d: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Milk Hygiene By Source and District, 2002/03 Agricultural Year

District	Source of Advice on Milk Hygiene						Total	Total Number of households raising livestock	% receiving advice out of total
	Government	NGO / Development Project	Co-operative	Large Scale Farmer	Other	not applicable			
Rombo	6,095	0	0	0	118	103	6,316	37,949	17
Mwanga	3,436	79	0	43	0	0	3,558	12,792	28
Same	4,412	585	0	0	0	0	4,997	18,506	27
Moshi Rural	14,705	0	0	0	0	0	14,705	56,368	26
Hai	11,116	604	230	125	0	0	12,076	32,839	37
Total	39,765	1,268	230	168	118	103	41,652	158,453	26
%	95.5	3.0	0.6	0.4	0.3	0.2	100		

29.1e: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Disease Control By Source and District, 2002/03 Agricultural Year

District	Source of Advice on Disease Control						Total	Total Number of households raising livestock	% receiving advice out of total
	Government	NGO / Development Project	Co-operative	Large Scale Farmer	Other	not applicable			
Rombo	15,455	0	0	0	114	103	15,672	37,949	41
Mwanga	6,259	149	0	43	43	0	6,494	12,792	51
Same	7,394	1,540	0	0	207	74	9,215	18,506	50
Moshi Rural	28,880	401	139	0	138	139	29,697	56,368	53
Hai	16,114	214	0	0	126	0	16,454	32,839	50
Total	74,102	2,304	139	43	627	316	77,531	158,453	49
%	96	3	0	0	1	0	100		

29.1f: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Herd /Flock Size and Selection By Source and District, 2002/03 Agricultural Year

District	Source of Advice on Herd/Flock Size and Selection				Total Number of households raising livestock	% receiving advice out of total
	Government	NGO / Development	Large Scale Farmer	Total		
Rombo	3,299	236	118	3,653	37,949	10
Mwanga	2,792	72	0	2,864	12,792	22
Same	1,536	652	0	2,188	18,506	12
Moshi Rural	7,780	269	0	8,050	56,368	14
Hai	6,283	0	0	6,283	32,839	19
Total	21,691	1,229	118	23,037	158,453	15
%	94	5	1	100		

**29.1g: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice
Pasture Establishment and Selection By Source and District, 2002/03 Agricultural Year**

District	Source of Advice on Pasture Establishment						Total Number of households raising livestock	% receiving advice out of total	
	Government	NGO / Development Project	Co-operative	Large Scale Farmer	Other	not applicable			
Rombo	3,737	0	0	0	118	0	3,855	37,949	10
Mwanga	2,755	190	0	43	0	0	2,987	12,792	23
Same	4,337	800	0	0	0	0	5,136	18,506	28
Moshi Rural	11,931	0	139	0	0	139	12,209	56,368	22
Hai	5,904	0	0	0	0	0	5,904	32,839	18
Total	28,664	989	139	43	118	139	30,091	158,453	19
%	95	3	0	0	0	0	100		

29.1.h: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Group Formation and Strengthening By Source and District,

District	Source of Advice on Group Formation						Total Number of households raising livestock	% receiving advice out of total
	Government	NGO / Development Project	Co-operative	Other	not applicable	Total		
Rombo	11,823	117	0	118	236	12,294	37,949	32
Mwanga	1,854	532	131	0	43	2,560	12,792	20
Same	2,417	1,097	591	0	0	4,105	18,506	22
Moshi Rural	12,662	138	278	0	0	13,077	56,368	23
Hai	10,213	338	348	0	0	10,899	32,839	33
Total	38,969	2,223	1,348	118	278	42,935	158,453	27
%	91	5	3	0	1	100		

29.1i: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Calf Rearing By Source and District, 2002/03 Agricultural Year

District	Source of Advice on Calf Rearing							Total Number of households raising livestock	% receiving advice out of total
	Government	NGO / Development Project	Co-operative	Large Scale Farmer	Other	not applicable	Total		
Rombo	7,735	0	0	0	0	236	7,971	37,949	21
Mwanga	4,333	284	0	85	0	0	4,702	12,792	37
Same	5,146	1,324	0	0	71	74	6,615	18,506	36
Moshi Rural	21,199	0	0	0	0	139	21,337	56,368	38
Hai	12,111	119	118	0	126	0	12,473	32,839	38
Total	50,525	1,726	118	85	197	449	53,099	158,453	34
%	95	3	0	0	0	1	100		

29.1j: LIVESTOCK EXTENSION: Number of Agricultural Households Receiving Extension Advice on Use of Improved Bulls By Source and District, 2002/03 Agricultural Year

District	Source of Advice on the Use of Improved Bulls						Total Number of households raising livestock	% receiving advice out of total
	Government	NGO / Development Project	Co-operative	Large Scale Farmer	not applicable	Total		
Rombo	10,877	0	0	0	353	11,230	37,949	30
Mwanga	4,444	198	0	43	0	4,685	12,792	37
Same	5,156	1,319	0	0	0	6,476	18,506	35
Moshi Rural	20,846	0	0	0	0	20,846	56,368	37
Hai	10,300	598	235	0	0	11,134	32,839	34
Total	51,623	2,115	235	43	353	54,370	158,453	34
%	95	4	0	0	1	100		

29.1h: LIVESTOCK EXTENSION: Number of Agricultural Households By Quality of Extension Services and District, 2002/03 Agricultural Year

District	Quality of Service										
	Very Good		Good		Average		Poor		No Good		Total
	Number	%	Number	%	Number	%	Number	%	Number	%	Number
Rombo	5,273	23	13,573	60	3,749	17	0	0	0	0	22,595
Mwanga	2,644	27	5,704	59	1,179	12	215	2	0	0	9,741
Same	3,451	16	11,624	54	3,025	14	875	4	2,551	12	21,525
Moshi Rural	10,386	26	21,629	55	4,840	12	1,091	3	1,516	4	39,462
Hai	6,766	32	10,038	47	2,106	10	1,216	6	1,175	6	21,301
Total	28,519	25	62,568	55	14,899	13	3,396	3	5,242	5	114,624

ACCESS TO INFRASTRUCTURE AND OTHER SERVICES

Table 33.01a: Mean distances from horders dwellings to Infrastructures and services by District

District	Mean Distance to										
	Secondary Schools	Primary Schools	All weather roads	Feeder Roads	Hospitals	Health Clinics	Regional Capital	Primary Markets	Secondary Market	Tertiary Market	Tarmac Roads
Rombo	4	1	1	0	16	5	70	5	29	55	40
Mwanga	5	1	4	5	19	4	74	8	31	23	25
Same	7	1	6	1	38	4	128	13	32	20	29
Moshi Rur	3	2	1	2	10	3	23	4	16	19	7
Hai	4	2	1	1	15	3	29	6	14	25	7
Total	4	2	2	1	17	4	53	6	22	29	19

Regional Capital	53
All Weather Roads	2
Tarmac Roads	19
Hospitals	17
Tertiary Markets	29
Secondary Market	22
Secondary Schools	4
Primary Markets	6
Health Clinics	4
Primary Schools	2
Feeder Roads	1

33.01b: Mean distance from holders dwellings to infrastructures and services by District

District	Distance to Secondary School										Total Number of Households	Mean Distance
	Less than 1 km		1 - 2.9 km		3 - 9.9 km		10 - 19.9 km		Above 20 km			
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%		
Rombo	2,112	4	12,648	27	30,775	65	1,479	3	0	0	47,014	28
Mwanga	2,788	17	4,465	27	6,837	41	1,810	11	849	5	16,749	21
Same	2,393		6,747		14,769		2,798		2,396		29,103	
Moshi Rur	9,026	12	31,503	41	33,676	44	2,363	3	258	0	76,826	37
Hai	3,088	7	18,670	40	19,713	42	4,819	10	191	0	46,481	8
Total	19,407	9	74,033	34	105,770	49	13,269	6	3,693	2	216,173	25

33.01c: Mean distance from holders dwellings to all Weather roads by District

District	Distance to All Weather Roads										Total Number of Households	Mean Distance
	Less than 1 km		1 - 2.9 km		3 - 9.9 km		10 - 19.9 km		Above 20 km			
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%		
Rombo	27,064	58	12,262	26	7,230	15	458	1	0	0	47,014	1
Mwanga	9,729	58	4,625	28	1,920	11	218	1	300	2	16,792	4
Same	9,365		7,781		6,505		3,328		2,123		29,103	6
Moshi Rural	50,853	66	18,294	24	7,409	10	138	0	132	0	76,826	1
Hai	28,797	62	11,052	24	5,864	13	768	2	0	0	46,481	1
Total	125,808	58	54,014	25	28,928	13	4,911	2	2,555	1	216,216	2

33.01d: Mean distance from holders dwellings to Feeder Roads by District

District	Distance to Feeder Road										Total Number of Households	Mean Distance
	Less than 1 km		1 - 2.9 km		3 - 9.9 km		10 - 19.9 km		Above 20 km			
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%		
Rombo	42,788	91	3,992	8	234	0	0	0	0	0	47,014	0
Mwanga	12,986	78	3,252	19	341	2	0	0	169	1	16,749	5
Same	17,825		9,858		1,282		0		138		29,103	1
Moshi Rural	62,563	81	12,563	16	927	1	516	1	256	0	76,826	2
Hai	37,519	81	7,864	17	474	1	125	0	499	1	46,481	1
Total	173,682	80	37,529	17	3,259	2	641	0	1,062	0	216,173	1

33.01e: Mean distance from holders dwellings to Hospital by District

District	Distance to Hospital										Total Number of Households	Mean Distance
	Less than 1 km		1 - 2.9 km		3 - 9.9 km		10 - 19.9 km		Above 20 km			
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%		
Rombo	117	0	2,684	6	17,881	38	11,037	23	15,295	33	47,014	74
Mwanga	373	2	3,088	18	2,942	18	2,490	15	7,855	47	16,749	90
Same	592		1,323	5	4,021	14	5,846	20	17,321	60	29,103	38
Moshi Rur	2,146	3	9,868	13	35,931	47	20,400	27	8,481	11	76,826	49
Hai	1,177	3	4,859	10	8,083	17	17,971	39	14,390	31	46,481	15
Total	4,405	2	21,822	10	68,858	32	57,744	27	63,343	29	216,173	72

33.01f: Mean distance from holders dwellings to Health Clinic by District

District	Distance to Health Clinic										Total Number of Households	Mean Distance
	Less than 1 km		1 - 2.9 km		3 - 9.9 km		10 - 19.9 km		Above 20 km			
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%		
Rombo	5,045	11	18,496	39	22,298	47	943	2	232	0	47,014	7
Mwanga	3,700	22	8,004	48	4,709	28	173	1	206	1	16,749	10
Same	2,765	10	12,650	43	11,978	41	489	2	1,220	4	29,103	10
Moshi Rur	13,157	17	35,142	46	26,189	34	1,844	2	493	1	76,826	7
Hai	5,521	12	19,648	42	20,262	44	927	2	123	0	46,481	6
Total	30,189	14	93,941	43	85,437	40	4,377	2	2,273	1	216,173	8

33.01g: Mean distance from holders dwellings to Primary School by District

District	Distance to Primary School										Total Number of Households
	Less than 1 km		1 - 2.9 km		3 - 9.9 km		10 - 19.9 km		Above 20 km		
	Number of households	%	Number of households	%	Number of households	%	Number of households	%	Number of households	%	
Rombo	18,057	38	25,453	54	3,386	7	118	0	0	0	47,014
Mwanga	7,550	45	7,450	44	1,705	10	0	0	43	0	16,749
Same	11,187		14,493	50	3,143	11	207	1	74	0	29,103
Moshi Rur	25,258	33	43,836	57	7,483	10	0	0	249	0	76,826
Hai	13,423	29	28,422	61	4,342	9	96	0	198	0	46,481
Total	75,475	35	119,654	55	20,059	9	420	0	564	0	216,173

33.1h: Number of Households to Regional Capital

District	Less than 1 km	1 - 2.9 km	3 - 9.9 km	10 - 19.9 km	Above 20 km	Total	Mean Distance
Rombo	467	116	938	118	45,375	47,014	70
Mwanga	0	0	78	44	16,585	16,706	74
Same	370	0	0	0	28,733	29,103	128
Moshi Rural	514	261	18,160	20,293	37,598	76,826	23
Hai	241	731	2,828	14,104	28,576	46,481	29
Total	1,591	1,109	22,004	34,558	156,867	216,130	53

33.01j : Number of Households by Distance to Tarmac Road and District for the 2002/03 Agricultural Year

District	Less than 1	1 - 2.9	3 - 9.9	10 - 19.9	Above 20	Total Households	Mean Distance
Rombo	823	0	1,414	3,299	41,479	47,014	40
Mwanga	1,222	995	1,863	5,403	7,266	16,749	25
Same	1,315	145	2,320	6,378	18,946	29,103	29
Moshi Rural	8,526	16,763	28,417	19,328	3,792	76,826	7
Hai	4,865	6,368	24,371	8,540	2,337	46,481	7
Total	16,750	24,271	58,384	42,947	73,821	216,173	19

33.01k: Number of Households by Distance to Primary Market for the 2002/03 Agricultural Year

District	Less than 1	1 - 2.9	3 - 9.9	10 - 19.9	Above 20	Total Households	Mean Distance
Rombo	3,524	13,368	27,303	2,230	589	47,014	5
Mwanga	2,912	2,462	6,607	4,225	543	16,749	8
Same	2,659	8,017	12,569	2,350	3,508	29,103	13
Moshi Rural	8,848	27,004	35,295	4,184	1,495	76,826	4
Hai	4,607	6,295	29,748	5,346	486	46,481	6
Total	22,549	57,146	111,523	18,334	6,620	216,173	6

33.01l: Number of Households by Distance to Tertiary Market for the 2002/03 Agricultural Year

District	Less than 1	1 - 2.9	3 - 9.9	10 - 19.9	Above 20	Total Households	Mean Distance
Rombo	9,017	354	117	0	37,526	47,014	55
Mwanga	263	303	2,013	5,348	8,822	16,749	23
Same	2,249	760	7,282	4,325	14,487	29,103	20
Moshi Rural	1,011	810	23,657	22,120	29,227	76,826	19
Hai	341	357	7,807	12,300	25,676	46,481	25
Total	12,881	2,584	40,876	44,093	115,739	216,173	29

33.01m: Number of Households by Distance to Secondary Market for the 2002/03 Agricultural Year

District	Less than 1	1 - 2.9	3 - 9.9	10 - 19.9	Above 20	Total Households	Mean Distance
Rombo	9,841	1,525	7,104	3,410	25,134	47,014	29
Mwanga	2,007	184	930	1,921	11,707	16,749	31
Same	1,723	132	4,667	4,801	17,781	29,103	32
Moshi Rural	1,466	1,309	15,909	33,993	24,148	76,826	16
Hai	655	1,248	16,234	17,232	11,112	46,481	14
Total	15,692	4,398	44,845	61,357	89,881	216,173	22

33.19a TYPE OF SERVICE: Number of Agricultural Households by Satisfaction of Using Veterinary Clinic and District, 2002/03 Agricultural Year

District	Satisfaction of Using Veterinary Clinic										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	4,561	2	18,100	6	14,838	5	23,339	8	1,160	0	282,085
Mwanga	2,038	2	6,741	7	9,159	9	4,423	4	87	0	100,493
Same	1,607		10,262		16,589		14,786		12,961		174,617
Moshi Rur	10,022	2	38,798	8	41,983	9	3,381	1	4,741	1	460,954
Hai	7,960	3	25,101	9	38,526	14	20,074	7	2,952	1	278,887
Total	26,187	2	99,001	8	121,096	9	66,003	5	21,901	2	1,297,036

33.19b TYPE OF SERVICE: Number of Households by Satisfaction of Using Extension Centre and District, 2002/03 Agricultural Year

District	Extension Centre										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	2,036	9	9,980	46	6,893	32	2,341	11	235	0	21,484
Mwanga	1,314		3,442		2,087		218		0		7,061
Same	942	8	5,785	47	2,936	24	664	5	1,905	16	12,232
Moshi Rur	4,164	10	20,227	48	16,624	40	125	0	681	2	41,821
Hai	3,373	13	12,007	47	8,645	34	1,648	6	0	0	25,673
Total	11,829	11	51,440	48	37,186	34	4,996	5	2,820	3	108,272

33.19c TYPE OF SERVICE: Number of Households by Satisfaction of Using Research Centre and District, 2002/03 Agricultural Year

District	Research Station										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	0	0	0	0	0	0	4,314	95	231	0	4,545
Mwanga	85		214		1,302		1,130		0		2,731
Same	0	0	588	7	2,061	0	2,958	37	2,493	31	8,100
Moshi Rur	817	9	2,291	26	4,415	50	549	6	811	9	8,884
Hai	658	5	1,729	13	6,079	45	4,865	36	295	2	13,626
Total	1,561	4	4,823	13	13,857	37	13,816	36	3,831	10	37,887

33.19d TYPE OF SERVICE: Number of Households by Satisfaction of Using Plant Protection Lab and District, 2002/03 Agricultural Year

District	Plant Protection Lab.										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	0	0	0	0	0		4,313	97	115	3	4,428
Mwanga	42	2	86	3	1,303	52	1,039	41	43	2	2,513
Same	0	0	364	5	1,626	21	3,399	43	2,493	32	7,882
Moshi Rural	540	8	1,488	23	3,164	48	681	10	677	10	6,550
Hai	246	2	1,595	13	5,497	44	4,753	38	347	3	12,438
Total	828	2	3,533	10	11,591	34	14,186	42	3,675	11	33,811

33.19e TYPE OF SERVICE: Number of Households by Satisfaction of using Land Registration Office and District, 2002/03 Agricultural Year

District	Land Registration Office										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	118	2	354	5	1,645	24	4,545	66	231	3	6,893
Mwanga	0	0	219	10	1,073	50	869	40	0	0	2,160
Same	74	1	586	7	3,985	46	1,551	18	2,418	28	8,614
Moshi Rural	799	9	2,901	32	4,110	45	549	6	811	9	9,172
Hai	548	5	2,488	21	6,635	55	2,006	17	337	3	12,014
Total	1,540	4	6,548	17	17,448	45	9,520	25	3,798	10	38,853

33.19f TYPE OF SERVICE: Number of Households by Satisfaction of using Livestock Development centre and Registration Office and District, 2002/03 Agricultural Year

District	Livestock Development Centre										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Rombo	2,178	0	6,486	36	5,149	29	3,862	22	231	1	17,907
Mwanga	303		981	29	1,789	52	343	10	0	0	3,415
Same	148	0	438	6	2,069	28	3,034	41	1,752	24	7,441
Moshi Rural	531	0	1,546	24	2,712	42	677	11	949	15	6,415
Hai	251	0	1,650	13	5,631	44	3,937	31	1,337	10	12,806
Total	3,411	0	11,101	23	17,350	36	11,852	25	4,269	9	47,983

33.19G TYPE OF SERVICE: Number of Households by Level of satisfaction of the Service and District, 2002/03 Agricultural Year

TYPE OF SERVICE	LEVEL OF SATISFACTION OF THE SERVICE										Total Number of Households
	Very Good		Good		Average		Poor		No good		
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	
Veterinary Clinic	26,187	0	99,001	1	121,096	1	66,003	1	21,901	1	1,297,036
Extension Services	11,829	6	51,440	30	37,186	28	4,996	20	2,820	15	108,272
Research Station	1,561	2	4,823	9	13,857	22	13,816	31	3,831	36	37,887
Plant Protection Lab	828	0	3,533	0	11,591	5	14,186	37	3,675	58	33,811
Land Registration Office	1,540	11	6,548	10	17,448	23	9,520	30	3,798	27	38,853
Livestock Development Centre	3,411	0	11,101	22	17,350	32	11,852	29	4,269	17	47,983

HOUSEHOLDS FACILITIES

34-1: Number of Agricultural Households by Type of TOILET by District during the 2002/03 Agricultural Year

District	Type of Toilet					Total Number of Households
	No Toilet	Flush Toilet	Traditional Pit Latrine	Improved Pit Latrine - hh Owned	Other Type	
Rombo	786	662	43,098	2,469	0	47,014
Mwanga	235	204	15,665	644	0	16,749
Same	734	132	28,021	217	0	29,103
Moshi Rur	801	3,410	66,805	5,674	136	76,826
Hai	1,588	1,129	41,361	2,307	96	46,481
Total	4,143	5,538	194,950	11,310	231	216,173
%	2	3	90	5	0	100

34-2: Number of Agricultural Households Reported Average Number of Rooms and Type of Roofing Materials by District for the 2002/03 Agricultural Year

District	Type of Roofing materials								Total Number of Households
	Average Number of rooms per Household	Iron sheet	Tiles	Concrete	Asbestos	Grass/Leaves	Grass & Mud	Other	
Rombo	3	45,285	350	118	118	1,024	118	0	47,014
Mwanga	4	14,765	212	86	42	1,516	127	0	16,749
Same	3	20,515	148	0	142	6,589	1,635	74	29,103
Moshi Rur	3	72,684	338	133	139	3,401	132	0	76,826
Hai	3	40,594	123	0	641	3,974	504	646	46,481
Total	3	193,843	1,171	337	1,083	16,504	2,516	720	216,173
%		89.7	0.5	0.2	0.5	7.6	1.2	0.0	100

34.3: Number of Agricultural Households by Type of Owned Assets and District, 2002/03 Agricultural Year

Type of Owned Asset	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Radio	37,125	22	13,482	8	19,602	12	62,079	37	36,124	21	168,412	78
Landline phones	807	22	640	17	0	0	1,529	41	722	20	3,697	2
Mobile Phones	3,508	16	961	4	436	2	11,574	53	5,197	24	21,676	10
Iron	21,631	21	8,200	8	10,026	10	40,602	39	23,994	23	104,453	48
Wheelbarrow	12,889	29	1,269	3	1,512	3	16,620	37	12,122	27	44,412	21
Bicycles	19,634	32	3,681	6	5,447	9	16,250	27	16,194	26	61,206	28
Vehicles	1,523	22	378	5	219	3	3,747	53	1,180	17	7,046	3
Television/Video	700	7	1,058	11	278	3	5,854	63	1,477	16	9,366	4
Total Number of Households	97,817		29,668		37,520		158,253		97,010		216,173	100

34.4 Number of Agricultural Households by Main Source of Energy Used for Lighting and District, 2002/03 Agricultural Year

Main Source of Energy for Lighting	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Mains Electricity	2,578	10	3,273	12	730	3	14,841	55	5,400	20	26,823	12
Solar	0	10	0	12	72	3	0	55	370	20	441	12
Gas (Biogas)	0	0	87	24	0	0	271	76	0	0	358	0
Hurricane Lamp	20,819	23	8,416	9	11,434	12	30,497	33	20,417	22	91,583	42
Pressure Lamp	2,503	19	420	3	810	6	6,590	51	2,541	20	12,864	6
Wick Lamp	20,878	25	4,474	5	16,057	19	24,217	29	17,754	21	83,380	39
Candles	118	19	0	0	0	0	0	0	118	19	605	0
Firewood	118	10	78	12	0	3	409	55	0	20	605	12
Total Number of Households	47,014	22	16,749	8	29,103	13	76,826	36	46,599	22	216,173	100

34.5: Number of Agricultural Households by Main Source of Energy Used for Cooking and District, 2002/03 Agricultural Year

Main Source of Energy for Lighting	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%
Mains Electricity	234	15	170	11	0	0	735	46	474	29	1,613	1
Solar	0	0	0	0	0	0	803	71	327	29	1,131	1
Gas (Biogas)	0	0	0	0	0	0	139	100	0	0	139	0
Bottled Gas	118	48	0	0	0	0	0	0	126	52	244	0
Parraffin / Kerocine	118	16	30	4	0	0	371	52	197	28	716	0
Charcoal	117	3	82	2	265	8	2,026	59	959	28	3,449	2
Firewood	45,719	22	16,337	8	28,617	14	72,139	35	44,151	21	206,963	96
Crop Residues	707	38	129	7	147	8	613	33	248	13	1,845	1
Livestock Dung	0	0	0	0	74	100	0	0	0	0	74	0
Total Number of Households	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	100

34.6: Number of Agricultural Households by Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year

Source	Season	District				
		Rombo	Mwanga	Same	Moshi Rur	Hai
Piped Water	Wet	38,601	6,329	7,620	46,766	25,417
	Dry	40,625	5,738	8,215	41,986	25,292
Protected Well	Wet	324	1,769	590	2,593	346
	Dry	221	1,724	663	2,460	229
Protected / Covered Spring	Wet	117	682	2,488	2,298	3,481
	Dry	353	767	2,416	3,538	3,481
Upprotected Well	Wet	0	555	1,153	602	0
	Dry	0	642	1,224	602	0
Unprotected Spring	Wet	2,511	4,897	13,062	19,300	8,568
	Dry	4,215	5,368	13,274	22,856	8,665
Surface Water (Lake / Dam / River / Stream)	Wet	796	2,390	4,190	4,590	8,668
	Dry	1,014	2,433	3,310	4,715	8,613
Covered Rainwater Catchment	Wet	1,634	83	0	139	0
	Dry	118	41	0	132	0
Uncovered Rainwater Catchment	Wet	2,916	0	0	121	0
	Dry	116	37	0	121	76
Tanker Truck	Wet	0	0	0	417	0
	Dry	118	0	0	0	0
Other	Wet	117	43	0	0	0
	Dry	235	0	0	415	126
Total Agricultural Households per District		94,028	33,498	58,206	153,651	92,962

34.7: Proportion of Agricultural Households by Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year

Source	Season	District				
		Rombo	Mwanga	Same	Moshi Rur	Hai
Piped Water	Wet	41	19	13	30	27
	Dry	43	17	14	27	27
Protected Well	Wet	0	5	1	2	0
	Dry	0	5	1	2	0
Protected / Covered Spring	Wet	0	2	4	1	4
	Dry	0	2	4	2	4
Upprotected Well	Wet	0	2	2	0	0
	Dry	0	2	2	0	0
Unprotected Spring	Wet	3	15	22	13	9
	Dry	4	16	23	15	9
Surface Water (Lake / Dam / River / Stream)	Wet	1	7	7	3	9
	Dry	1	7	6	3	9
Covered Rainwater Catchment	Wet	2	0	0	0	0
	Dry	0	0	0	0	0
Uncovered Rainwater Catchment	Wet	3	0	0	0	0
	Dry	0	0	0	0	0
Tanker Truck	Wet	0	0	0	0	0
	Dry	0	0	0	0	0
Other	Wet	0	0	0	0	0
	Dry	0	0	0	0	0

34.8 Number of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year

Distance to main Source of Drinking Water	Season	District				
		Rombo	Mwanga	Same	Moshi Rur	Hai
Less than 100m	Wet	20,684	2,730	6,723	27,131	13,258
	Dry	11,672	2,378	6,132	22,461	13,154
100 - 299 m	Wet	9,969	4,222	9,399	13,789	8,525
	Dry	6,111	4,024	8,737	13,022	8,864
300 - 499 m	Wet	943	1,518	1,617	3,211	2,977
	Dry	1,532	1,361	1,621	3,357	2,977
500 - 999 m	Wet	3,715	4,290	4,800	11,542	8,562
	Dry	4,532	4,103	4,802	11,664	8,231
1 - 1.99 Km	Wet	5,162	2,962	4,196	11,422	9,442
	Dry	4,180	2,696	4,200	13,590	9,410
2 - 2.99 Km	Wet	2,541	678	1,135	5,994	1,889
	Dry	4,031	773	1,706	7,401	1,937
3 - 4.99 Km	Wet	2,608	200	647	1,357	730
	Dry	6,587	663	1,320	2,474	820
5 - 9.99 Km	Wet	1,392	149	585	2,378	1,098
	Dry	8,016	750	585	2,857	1,087

34.9 Proportion of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year

Source	Season	District				
		Rombo	Mwanga	Same	Moshi Rur	Hai
Less than 100m	Wet	22	8	12	18	14
	Dry	12	7	11	15	14
100 - 299 m	Wet	11	13	16	9	9
	Dry	7	12	15	8	10
300 - 499 m	Wet	1	5	3	2	3
	Dry	2	4	3	2	3
500 - 999 m	Wet	4	13	8	8	9
	Dry	5	12	8	8	9
1 - 1.99 Km	Wet	6	9	7	7	10
	Dry	4	8	7	9	10
2 - 2.99 Km	Wet	3	2	2	4	2
	Dry	4	2	3	5	2
3 - 4.99 Km	Wet	3	1	1	1	1
	Dry	7	2	2	2	1
5 - 9.99 Km	Wet	1	0	1	2	1
	Dry	9	2	1	2	1

34.10: Number of Agricultural Households by Time spent to and from Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year

Distance to main Source of Drinking Water	Season	District				
		Rombo	Mwanga	Same	Moshi Rural	Hai
Less than 10	Wet	11,024	1,470	1,161	18,812	10,510
	Dry	4,994	1,168	1,096	17,374	10,674
10 - 19 Minutes	Wet	13,334	4,835	7,950	20,945	9,557
	Dry	7,481	4,334	7,474	17,108	9,671
20 - 29 Minutes	Wet	2,871	2,080	3,507	5,836	3,866
	Dry	1,738	1,919	3,178	5,838	4,097
30 - 39 Minutes	Wet	6,140	4,044	5,804	10,974	7,408
	Dry	6,229	3,972	4,932	12,958	7,968
40 - 49 Minutes	Wet	927	1,013	2,057	2,764	2,399
	Dry	706	1,150	1,983	3,174	1,489
50 - 59 Minutes	Wet	3,288	1,281	2,354	6,651	3,266
	Dry	2,703	959	1,624	6,262	2,415
above one Hour	Wet	9,429	2,027	6,271	10,844	9,475
	Dry	23,162	3,247	8,817	14,112	10,168

34.9 Proportion of Agricultural Households Reporting Distance to Main Source of Drinking Water by Season (Wet and Dry) and District, 2002/03 Agricultural Year

Source	Season	District				
		Rombo	Mwanga	Same	Moshi Rural	Hai
Less than 100m	Wet	22	8	12	18	14
	Dry	12	7	11	15	14
100 - 299 m	Wet	11	13	16	9	9
	Dry	7	12	15	8	10
300 - 499 m	Wet	1	5	3	2	3
	Dry	2	4	3	2	3
500 - 999 m	Wet	4	13	8	8	9
	Dry	5	12	8	8	9
1 - 1.99 Km	Wet	6	9	7	7	10
	Dry	4	8	7	9	10
2 - 2.99 Km	Wet	3	2	2	4	2
	Dry	4	2	3	5	2
3 - 4.99 Km	Wet	3	1	1	1	1
	Dry	7	2	2	2	1
5 - 9.99 Km	Wet	1	0	1	2	1
	Dry	9	2	1	2	1

34.12: Number of Households by Number of Meals the Household Normally Took per Day by District

Number of Meals per Day	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Household	%
One	4,556	51	175	2	292	3	1,820	21	2,018	23	8,860	4
Two	17,527	24	4,363	6	9,162	13	23,442	32	18,483	25	72,977	34
Three	24,699	19	12,167	9	19,649	15	51,057	38	25,742	19	133,314	62
Four	233	23	44	4	0	0	507	50	239	23	1,021	0
Total	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	100

34.13: Number of Households by Number of Days the Household Consumed Meat during the Preceding Week by District

Number of Days	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai			
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Household	%
Not Eaten	7,570	25	3,880	13	6,858	23	5,948	20	6,003	20	30,258	14
One	26,491	31	7,514	9	11,897	14	26,524	31	12,163	14	84,588	39
Two	10,842	17	4,062	6	7,902	12	23,580	37	17,511	27	63,897	30
Three	1,875	7	820	3	1,649	6	14,377	53	8,282	31	27,004	12
Four	118	2	245	4	429	7	3,887	63	1,474	24	6,153	3
Five	0	0	70	4	74	4	887	51	699	40	1,730	1
Six	0	0	38	3	74	6	872	72	224	19	1,209	1
Seven	118	9	120	9	220	17	751	56	125	9	1,335	1
Total	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	100

34.14: Number of Households by Number of Days the Household Consumed Fish during the Preceding Week by District

Number of Days	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai		Number of Household	%
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%		
Not Eaten	13,322	44	678	2	4,053	13	4,711	15	7,819	26	30,583	14
One	21,211	33	1,749	3	4,168	6	21,335	33	15,759	25	64,222	30
Two	9,653	16	2,703	4	5,817	10	29,292	48	13,421	22	60,885	28
Three	2,121	8	3,739	14	5,186	19	11,255	41	4,876	18	27,178	13
Four	354	2	3,507	22	4,832	30	4,548	29	2,632	17	15,873	7
Five	0	0	1,895	20	3,083	32	4,030	42	696	7	9,705	4
Six	0	0	922	27	811	23	1,308	38	421	12	3,462	2
Seven	354	8	1,556	36	1,153	27	347	8	857	20	4,266	2
Total	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	100

34.15: Number of Agricultural Households Reporting the Status of Food Satisfaction of the Household during the Preceding Year by District

Status of Food Satisfaction	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai		Number of Household	%
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%		
Never	18,607	16	5,021	4	9,261	8	53,441	45	31,576	27	117,906	55
Seldom	19,588	30	7,220	11	13,266	21	15,666	24	8,732	14	64,472	30
Sometimes	2,678	28	1,393	15	1,556	16	2,799	30	1,011	11	9,438	4
Often	4,041	29	1,924	14	2,390	17	2,732	20	2,665	19	13,752	6
Always	2,100	20	1,192	11	2,630	25	2,186	21	2,497	24	10,605	5
Total	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	100

34-16: Number of Households by Main Source of Income and District, 2002/03 Agricultural Year

Main Source of Cash Income	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai		Number of Household	%
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%		
Sales of Food Crops	13,120	14	5,120	5	15,766	17	36,928	39	23,982	25	94,916	44
Sale of Livestock	352	6	880	15	1,021	17	1,278	22	2,358	40	5,889	3
Sale of Livestock Products	471	15	126	4	293	10	785	26	1,374	45	3,050	1
Sales of Cash Crops	16,176	47	1,602	5	3,284	10	8,074	24	5,174	15	34,310	16
Sale of Forest Products	118	13	200	23	221	25	0	0	344	39	883	0
Business Income	6,003	28	1,872	9	1,161	5	8,667	40	3,804	18	21,507	10
Wages & Salaries in Cash	4,773	22	1,917	9	1,729	8	10,589	49	2,634	12	21,641	10
Other Casual Cash Earnings	5,532	23	2,817	12	4,030	17	6,788	28	5,248	21	24,415	11
Cash Remittance	469	6	2,092	27	1,243	16	2,961	38	998	13	7,764	4
Fishing	0	0	35	8	0	0	269	65	111	27	416	0
Other	0	0	88	6	355	26	486	35	453	33	1,382	1
Total	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	100

34.17: Number of households BY Type of Roofing Materials and District during 2002/03 Agricultural Year

Roofing Materials	District										Total	
	Rombo		Mwanga		Same		Moshi Rur		Hai		Number of Household	%
	Number of Households	%	Number of Households	%	Number of Households	%	Number of Households	%				
Iron Sheets	45,285	23	14,765	8	20,515	11	72,684	37	40,594	21	193,843	794
Tiles	350	30	212	18	148	13	338	29	123	10	1,171	5
Concrete	118	35	86	26	0	0	133	39	0	0	337	1
Asbestos	118	11	42	4	142	13	139	13	641	59	1,083	4
Grass/leaves	1,024	6	1,516	9	6,589	40	3,401	21	3,974	24	16,504	68
Grass & Mud	118	5	127	5	1,635	65	132	5	504	20	2,516	10
Other	0	0	0	0	74	10	0	0	646	90	720	3
Total	47,014	22	16,749	8	29,103	13	76,826	36	46,481	22	216,173	885

APPENDIX III QUESTIONNAIRES

UNITED REPUBLIC OF TANZANIA

Confidential



Page Number

Agriculture Sample Census 2002/03



ACLF 1: Sub-village leader listing form

Region _____ Code <input type="text"/>	Ward _____ Code <input type="text"/>
District _____ Code <input type="text"/>	Village _____ Code <input type="text"/>

Name of Village Chairman:.....

Sub-village leader number	Name of sub-village leader	Number of households		Comments
		From office register	After enumeration	
(1)	(2)	(3)	(4)	(5)
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
<input type="text"/>		<input type="text"/>	<input type="text"/>	
Total		<input type="text"/>	<input type="text"/>	

Name of enumerator..... Signature Date.....

Name of supervisor..... Signature Date.....

UNITED REPUBLIC OF TANZANIA



Confidential

National Agriculture Sample Census 2002/03

ACLF: 3 Household listing of 15 selected farmers

 Region _____
 District _____
 Ward _____
 Village _____




 Code
 Code
 Code
 Code


S/N	Sub village leader number		Name of sub-village leader	Agriculture hh serial number	Name of selected head of household	Number of							
	(1)	(2)				(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
01				<input type="text"/> <input type="text"/> <input type="text"/>									
02				<input type="text"/> <input type="text"/> <input type="text"/>									
03				<input type="text"/> <input type="text"/> <input type="text"/>									
04				<input type="text"/> <input type="text"/> <input type="text"/>									
05				<input type="text"/> <input type="text"/> <input type="text"/>									
06				<input type="text"/> <input type="text"/> <input type="text"/>									
07				<input type="text"/> <input type="text"/> <input type="text"/>									
08				<input type="text"/> <input type="text"/> <input type="text"/>									
09				<input type="text"/> <input type="text"/> <input type="text"/>									
10				<input type="text"/> <input type="text"/> <input type="text"/>									
11				<input type="text"/> <input type="text"/> <input type="text"/>									
12				<input type="text"/> <input type="text"/> <input type="text"/>									
13				<input type="text"/> <input type="text"/> <input type="text"/>									
14				<input type="text"/> <input type="text"/> <input type="text"/>									
15				<input type="text"/> <input type="text"/> <input type="text"/>									

Name of Enumerator: _____ Signature _____ Date _____

Name of Supervisor _____ Signature _____ Date _____

 Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development, Ministry of
 Cooperatives and Marketing and the National Bureau of Statistics

United Republic of Tanzania	
ACQ 1	
CONFIDENTIAL	
Small holder/Small Scale Farmer Questionnaire	
Agriculture Sample Census	
2002/2003	
	

Enumerator	Name	Signature													
	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%; text-align: center;">Hour</td> <td style="width: 50%;"></td> <td style="width: 50%; text-align: center;">Minutes</td> </tr> <tr> <td style="text-align: right;">Start time</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> </tr> <tr> <td style="text-align: right;">End time</td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> <td style="text-align: center;"><input type="text"/></td> </tr> </table>		Hour		Minutes	Start time	<input type="text"/>	<input type="text"/>	<input type="text"/>	End time	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Hour		Minutes												
Start time	<input type="text"/>	<input type="text"/>	<input type="text"/>												
End time	<input type="text"/>	<input type="text"/>	<input type="text"/>												
Field level checking by:			<i>To be completed by the supervisor ONLY after field/farm level checking of the enumeration process. This should be countersigned by the enumerator.</i>												
District Supervisor:	Name	signature		Date											
Regional Supervisor:	Name	signature		Date											
National Supervisor:	Name	signature		Date											
District checking in Office:			<i>All questionnaires must be checked at the district office.</i>												
District Supervisor	Name	signature		Date											
For Use at National Level only:			<i>See back page for details of query</i>												
Data Entered by	Name	signature		Date											
Queried	Name	signature		Date											

Executed by the Ministry of Agriculture and Food Security, Ministry of Water and Livestock Development,
 Ministry of Cooperatives and Marketing
 and
 National Bureau of Statistics

1.0 IDENTIFICATION DETAILS			
1.1 Location			
S/N	Location Name	Codes	
1.1.1	Region	<input type="text"/>	
1.1.2	District	<input type="text"/>	
1.1.3	Ward	<input type="text"/>	
1.1.4	Village	<input type="text"/>	
1.2 Details of the respondent and household head			
S/N		Codes	
1.2.1	Name & number of local leader	<input type="text"/>	
1.2.2	Name & number of household head	<input type="text"/>	
1.2.3	Sex of household head (Male = 1, Female = 2)	<input type="text"/>	
1.2.4	Name of respondent	<input type="text"/>	
1.2.5	Relationship of Respondent to Household Head		
<p>Relationship to household head codes (Q 1.2.5) Head of Household.....1 Son/Daughter3 Grandson/Granddaughter5 Other (friend, employee, etc)...8 Spouse2 Father/Mother4 Other relative.....6</p>			
2.0 ACTIVITIES OF THE HOUSEHOLD			
2.1	Type of Agriculture Household	<input type="text"/>	
<p>Agriculture household codes(Q2.1) Crops only.....1 Livestock only2 Pastoralist.....3 Crops and Livestock4</p>			
2.2	Rank the following livelihood activities/source of income of the household in order of importance		
S/N	Livelihood/source of income activity.	Rank in order of importance 1=most 7=least	How important are each of these activities expressed in percentage.
	(1)	(2)	(3)
2.2.1	Annual Crop farming	<input type="text"/>	<input type="text"/> %
2.2.2	Permanent crop farming	<input type="text"/>	<input type="text"/> %
2.2.3	Livestock keeping/herding	<input type="text"/>	<input type="text"/> %
2.2.4	Off Farm Income	<input type="text"/>	<input type="text"/> %
2.2.5	Remittances	<input type="text"/>	<input type="text"/> %
2.2.6	Fishing/hunting and gathering	<input type="text"/>	<input type="text"/> %
2.2.7	Tree/forest resources (eg honey, firewood, timber,etc)	<input type="text"/>	<input type="text"/> %
			<input type="text"/> %

Definition and working page for page 1

General Definitions

Small holder hh/small scale farm:

Should have between 25sq metres and 20 Hectares under production, and/or between 1 and 50 head of Cattle, and/or between 5 and 100 head of Sheep/Goats/Pigs, and/or between 50 and 1000 chickens/turkeys/ducks/rabbits.

Household: A group of people who occupy the whole or part of one or more housing units and makes joint provisions for food and/or other essentials for living.

Household Head: A person who is acknowledged by all other members of the household either by virtue of his age or standing in the household as the head. He/she should be a permanent resident of the house and he/she is the main person responsible for making decisions.

Agricultural Holding: This is an economic unit of agricultural production under single management. It consists of all livestock kept and all land used for agricultural production without regard to title. For the purpose of this survey, the agricultural holdings are restricted to those which meet one of the following conditions:

- Having or operated at least 25 sq meter of arable land
- Own or keep at least one head of cattle or five goats/sheep/pigs or fifty chicken/ducks/turkeys during the agricultural year 2002/03 (October 2002 to September 2003) .

Question Specific Definitions:

Type of Agriculture Holdings Codes (Q2.1):

- **Crops only:** A holding is referred to be a crops only holding if it has cultivated a piece of land equal or exceeding 25 sq Meter. This also applies to all households owning or have kept livestock whose number does not qualify such household to be an agricultural holding (No cattle, less than 5 goats/sheep/pigs, less than 50 chickens/turkeys/ducks/rabbits)

- **Livestock only:** A holding is referred to be a Livestock only holding if it has exercised Livestock husbandry only during the agricultural year. The livestock can be herded in search for areas of pasture, but the core household unit always remains in the same place and the herder is rarely away from this place for long periods at a time.

- **Livestock pastoralism:** This refers to a household which practices livestock production as its major income generating activity and a means of subsistence, but moves from one place to another searching for water and pasture for the livestock. This movement usually involves long distances and in many cases the whole household unit moves with the livestock and they have no permanent place of residence.

For both livestock only and pastoralism , the number of livestock has to be at least 1 head of cattle, 5 goats/sheep/pigs or 50 chickens/turkeys/ ducks/rabbits. This also applies to all households owning or have cultivated a piece of land less than 25 sq meter, which does not qualify such household be an agricultural holding.

- **Both crops and livestock:** A holding is referred to be a both crops and livestock if it has cultivated a piece of land equal or exceeding 25 sq meter and if such households is owning or have kept livestock whose number qualify such household be an agricultural holding.

Important livelihood activities/source of income (Q 2.2):

- **Crop farming:** This refers to a household where crop production is its major means of subsistence and income generation.

- **Livestock farming/herding/pastoralism:** This refers to a household where livestock farming/herding is its major means of subsistence & income generation.

- **Off Farm Income** This refers to cash generated from activities other than from the households holding. This can be from permanent employment (eg government/other), temporary employment/labouring and includes cash generated from working on other farmers farms.

-**Remittances:** Assistance from family members who are not currently part of the household, or from a relative or family friend. This assistance is usually in the form of cash but it can also be in-kind (eg food, clothes, building material, farm tools, etc). The money is a gift and is not paid back.

-**Fishing/hunting and gathering** The use of non farmed resources for food eg fishing, hunting wildlife and gathering mushrooms, berries, wild honey roots from uncultivated land.

Procedures for Questions:

Q 2.1 Type of agriculture household/holding

1. Using the options under the question classify the type of agriculture hh/holding

Note: If the hh had 1 acre of crops and raised 40 chickens during 2002/03 it is classified as '**Crops only**' as the number of chickens do not qualify the hh as keeping livestock.

Q 2.2 Important hh livelihood activities /source of income

1. Read the list in column 1 to the respondent and ask him to rank them in order of importance during the reference year.

2. In column 2 Indicate the importance of each activity by placing '1' against the most important, '2' against the second most important, etc until you reach '7' the least important activity/source of income.

Note: You must attempt to fill in all boxes. Most households will carry out these activities to a greater or lesser degree. You will normally have to probe to get remittances.

If the hh did not undertake an activity during the 2002/2003 agriculture year then mark the appropriate box in column 2 with an 'X'.

3. For each activity/source of income assign a percentage. The enumerator should assist the respondent in assigning the percentage based on the information provided by the farmer.

4. After completing column 3 make sure the percentages add up to 100.

Note: It is not essential to be 100% accurate. This question is just to give the relative importance of the different items in general terms

3.0 HOUSEHOLD INFORMATION

3.1 Give details of personal **particulars** of all household members beginning with the head of the household

S/N	Names of household members	Relation-ship to head	Sex M=1 F=2	Age (if age is above 99 years then write 99)	Survival of Parents		Read & Write	Edu- ca- tion Status	Education Level reached	Invol- vement in farming	Main activity (for aged 5 & above)	Off-farm Income Yes=1 No=2
					Mo- ther	Fa- ther						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
3.1.1	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relation to head (Col 2)

Head of household1
Spouse2
Son/daughter3
Father/Mother4
Grandson/granddaughter .5
Other Relative6
Others8

Survival of Parents (Col 5 & 6)

Yes1
No2
Don't know3

Read & Write (Col 7)

Swahili1
English2
Swahili & English3
Any other language4
Don't Read/ Write5

Education Status (Col 8)

Attending School1
Completed2
Never attended School3

Education Level Reached (Col 9)

Primary Education

Not of school ageNA
Under Standard One 00
Standard One01
Standard Two02
Standard Three03
Standard Four04
Standard Five05
Standard Six06
Standard Seven07
Standard Eight08
Training after Primary
Education09
Pre Form One10

Secondary Education

Form one11
Form two12
Form three13
Form four14
Form five15
Form six16
Training after Secondary
Education17
University & other tertiary
Education18
Adult Education19
Not applicable99

Involvement in farming activities (Col 10)

Works full time on farm ...1
Works part-time on farm 2
Rarely works on farm3
Never works on farm.....4

Main activity (Col 11)

Crop Farming01
Livestock Keeping/Herding..02
Livestock Pastoralism.....03
Fishing04
Paid employment:
- Government/parastatal05
- Private- NGO/mission/etc .06
Self employed (non farming)
- with employees07
- without employees08
Unpaid family helper (non
agriculture)09
Not working & available.....10
Not working & unavailable...11
Housemaker/housewife12
Student13
Unable to work /too old/
Retired/sick/disabled).....14
Other98

Definition and working page for page 2**Question Specific Definitions:****Relation to head (Col 2):**

- **Household Head:** A person who is acknowledged by all other members of the household either by virtue of their age or standing as the household head.

Read and Write (Col 7):

- **Any other language:** Must be a written language.

For someone who can read and write in Swahili and any other language apart from English, the correct code is 1. For one who can read and write in English and any other language apart from Swahili the correct code is 2. Code 4 should only be used for another language but not English or Swahili

Education Level Reached (Col 9):

Indicate the highest level only. For those still attending school fill in the last year reached before the survey period. For example if a hh member is currently in standard 7 this year his highest grade reached is standard 6

Main Activity (Col 11):

- **Crop farming:** The persons main activity is crop production. This can be annual crops, vegetables, permanent crops or tree farming.

- **Livestock farming/herding:** The persons main activity is livestock farming/herding. The livestock can be herded in search for areas of pasture, but the core household unit always remains in the same place and the herder is rarely away from this place for long periods at a time. This category also includes fish farming but not fishing.

- **Livestock pastoralism:** The persons main activity is in moving livestock from one place to another searching for water and pasture for the livestock. This movement usually involves long distances and in many cases the whole household unit moves with the livestock and they may have no permanent place of residence.

- **Paid employment** - In full time employment earning a cash income

- Government/Parastatal - In full time employment for a government Ministry, Department or Board that is controlled by the Government
- Private/NGO/Mission/etc - employed by Non public/government organisation

- **Self employee** - works for own business for cash income

- With employees - Works for own business for cash and employs other workers

- Without employees - Works for own business for cash but does not employ other workers

- **Not working but available to work** - No productive activity but would like to have one.

- **Not working & nor available for work** - No productive activity and does not want to have one.

- **Unable to work** too old, too young, retired, disabled, etc

Off-farm Income (Col 12) - Income made from activities NOT on the HH's farming activities. This can be any off farm income generation activity and includes working for cash on other peoples farms.

Indicate whether each member was involved in an off farm income generating activity during 2002/03

Overview to section 3.0**Section 3.0 - Preliminary note**

1. Make sure that you define the hh properly to ensure that all the members of the hh are included. Make sure you stress that the hh is not just the hh heads direct family and that it includes other people living and eating together with the family.

2. If you notice that his house is large or you see many people around his house and he has only given you small number of hh members enquire further until you are sure that you have captured all the hh members.

Procedures for questions**Section 3.0 - Household Information**

1. For each household member complete columns 1, 2 & 3.

2. After completing columns 1, 2 & 3 for each household member go back to the first household member and complete the remaining columns for that member.

3. Repeat step 2 for the rest of the household members

IMPORTANT NOTE:

Cross check responses in columns 11 and 12 with section 2 especially in relation to:

off-farm income - if a hh member was involved in off farm income then there should be a response in question 2.2.4 and vice versa.

4.0 LAND ACCESS/OWNERSHIP/TENURE			
4.1 Details of area "owned" by the household in the 2002/03 agricultural year. Give area reported by the respondent in "acres".		Area in Acres	
4.1.1	Area Leased/Certificate of ownership	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	4.2 Was all land available to the hh used during 2002/03 (Yes=1, No=2) <input type="checkbox"/>
4.1.2	Area owned under Customary Law	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
4.1.3	Area Bought from others	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	4.3 Do you consider that you have sufficient land for the hh (Yes=1, No=2) <input type="checkbox"/>
4.1.4	Area Rented from others	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
4.1.5	Area Borrowed from others	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	4.4 Do any female members of the hh own or have customary right to land (Yes=1, No=2) <input type="checkbox"/>
4.1.6	Area Share -cropped from others	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
4.1.7	Area under Other forms of tenure	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
Total area		<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	

5.0 LAND USE			
5.1 Area operated by household under different forms of land use during 2002/03 agriculture year. Give area reported by the respondent in "acres".		Area in Acres	
			Calculation area
5.1.1	Area under Temporary Mono-crops	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.2	Area under Temporary Mixed crops (eg Maize & beans)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.3	Area under Permanent Mono-crops	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.4	Area under Permanent Mixed crops (eg bananas, coffee & trees)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.5	Area under Permanent/temporary mix (eg bananas & maize)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.6	Area under Pasture	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.7	Area under Fallow	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.8	Area under Natural Bush	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.9	Area under Planted Trees	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.10	Area Rented to others	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.11	Area Unusable	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
5.1.12	Area of Uncultivated Usable land (excluding fallow)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	
Total area		<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	

6.0 ACCESS AND USE OF RESOURCES

6.1 In the following table indicate the distance to the different fields used by the household

S/N	Field Number	Distance (in kilometres) from field to:			Distance codes
		Homestead	Nearest road	Nearest Market	
6.1.1	1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<i>less than 100m1 between 2 and 3km6 between 100 and 300m ..2 between 3 and 5km7 between 300 and 500m ..3 between 5 and 10 km ..8 between 500 and 1km....4 Over 10 km9 between 1 and 2km5</i>
6.1.2	2	<input type="text"/>	<input type="text"/>	<input type="text"/>	
6.1.3	3	<input type="text"/>	<input type="text"/>	<input type="text"/>	

6.2 In the following table indicate the distance and use of the following communal resources

S/N	Communal Resource	Distance to resource (km)		Main hh use	Instructions for distance to resource (Col 2 and 3): If under 1km, write 0 If above 1km round to whole numbers eg 1.5km= 2km, 1.25km= 1km
		dry season	wet season		
	(1)	(2)	(3)	(4)	
6.2.1	Water for humans	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	Main hh use (Col 4) Home or farm Consumption/utilisation.....1 Sold to Neighbours.....2 Sold to trader on the farm.....3 Sold to village market4 Sold to local wholesale market.....5 Sold to major wholesale market6 Not used by household.....7 Not available8
6.2.2	Water for livestock	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.3	Communal Grazing	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.4	Communal Firewood	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.5	Wood for Charcoal	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.6	Building poles	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.7	Forest for bees (honey)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.8	Hunting (animal products)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	
6.2.9	Fishing (Fish)	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	

Definition and working page for page 3

Question Specific Definitions

Section 4.1 - Land Access/Ownership

Lease/Certificate of Ownership Area under lease/certificate of ownership refers to the area for which the household possesses a government issued leasehold title or certificate of ownership. The land will normally be officially surveyed and boundaries marked. This includes leased land bought from others where the lease/certificate of ownership has been transferred.

Customary Law: This refers to the land which the hh does not have an official government title to but its right of use is granted by the traditional leaders. This user-right agreement does not have to be granted directly by the village leaders as right of access may be passed on through heredity.

Bought: This refers to the area of customary land that has been bought from others. This land does not have an official title and therefore is not leasehold.

Rented from others: Land rented from others for Cash or for a fixed amount in crop produce (eg fixed number of bags at harvest).

Borrowed: Use granted by land owner free of charge. Land owner can either be a lease holder or has right of access through customary law.

Share Cropping: where the hh is permitted to use land which is then paid for from a percentage of the harvested crop.

Section 5.0 Land Use

- **Temporary crops:** are sown and harvested during the same agricultural year

- **Permanent crops:** are sown or planted once and then , they occupy the land for some years and need not to be replanted after each annual harvest. Permanent crops are mainly trees (e.g., apples) but also bushes and shrubs (e.g., berries), palms (e.g., dates), vines (e.g., grapes), herbaceous stems (e.g., bananas) and stemless plants (e.g., pineapples).

- **Mixed Crops:** This is a mixture of two or more crops planted together and mixed in the same plot/field. The two crops can either be randomly planted together or they can be planted in a particular pattern eg intercropping (1 row of maize and 1 row of beans). A field that has been divided into plots for different crops is not mixed. This is further subdivided into:

Permanent Mixed -two or more permanent crops grown together,
Permanent/Temporary Mix - permanent crop and annual crop together,
Temporary Mixed - two or more temporary, annual crops grown together.

- **Pasture Land:** This is an area of owned/allocated land which is set aside for livestock grazing. It can be improved pasture where the farmer has planted grass, applied fertilized or applied other production increasing technologies to improve the grazing. Or it can be rough pasture.

- **Fallow:** This is the area of land that is normally used for crop production, but is not used for crop production during a year or a number of years. This is normally to allow for self generation of fertility/soil structure and is often an integral part of the crop rotation system.

- **Natural Bush:** Land which is considered productive but is not under cultivation or used extensively for livestock production and has naturally growing shrubs and trees.

- **Planted trees:** Land which is used for planting trees for poles or timber

- **Unusable:** Land that is known to be non-productive for agriculture purposes

Uncultivated Usable: This is land that was not used for reasons other than fallow. The reasons could be lack of inputs/money/rainfall/etc

Distance to fields (Q6.1):

-**fields** A field is a contiguous piece of land holding which the farmer considers as a single entity. The field may be divided into plots for growing different crops. A holding may consist of one or more fields in different localities.

Use of Communal Resources (Q6.2):

-**Communal resources** - refers to the place on which all individual households can have access to. It is not individually owned or controlled by one hh.

NOTE: The listed resources refers to communal resources and not those individually owned or part shared. The resource has to be freely accessible to the whole village

Overview to section 4

Section 4.0 - Preliminary note Land Access/ Ownership

Access/Ownership refers to the area utilized by the members of the household. This does not include communal land where the resources are shared between households. It does include official communal land that the hh has sole access to eg a plot for crop farming in the communal area.

Procedures for Questions

Section 4.0 - Land Ownership

1. Ask the respondent if he knows the total area of land the household has sole access to. If he knows make a note in the calculation space
2. Ask the respondent the area of the different land ownership categories the household has sole access to (Q4.1.1 to 4.1.7) and record in the appropriate spaces.
3. Add up the area of the different categories of land and compare it with the total area obtained in step 1 (if the respondent provided the information).
4. If the total area is different find out which one is correct and make amendments where appropriate.

Section 5.0 - Land Use

1. Ask the respondent the area of the different landuse categories the household has sole access to (Q5.1.1 to 5.1.12) and record in the appropriate spaces.
2. Add up the area of the different categories of land and compare it with the total area obtained in section 4.0. The total area should be the same.
3. If the total area is different find out which one is correct and make amendments where appropriate.

Section 6.2 Communal resources

Note: the code "Not available" means that the resource does not exist. The code "Not Used" means that the resource does exist but is not used by the hh.

7.0 ANNUAL CROP AND VEGETABLE PRODUCTION - SHORT RAINY SEASON

7.1.1 Did the hh **plant** any crops during the **Short Rainy** season? (Yes = 1, No=2) *If the response is 'NO' give main reason Then go to section 7.2*

7.1.2 For each crop planted during 2002/03 **Short Rainy** season provide the following information

Main Reason (Above) No rains.....1 Rains came too late2 Does not plant annual crops3
 No money 4 Don't get Vuli season ..5 Illness/social problems6
 Has irrigation & does not follow season (give annual production in Masika)7

Crop Name	Crop Code	Land Clearing	Soil preparation	Planting		Inputs						Harvesting & Storage				Marketing			
				Planned area (acres)	Actual Planted area (acres)	% improved seed	Irrigation use	Fertiliser use	Herbicide use	Fungicide use	Pesticide use	How harvested	How threshed	Area Harvested (acres)	main product code	Quantity harvested (Kgs)	Quantity Stored (kgs)	Quantity sold (kgs)	Mostly sold to
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
Total Planned/Planted						Total area harvested													

7.1.3 Main reason for difference between **Area Planned** and **Area Planted**

7.1.4 Main reason for difference between **Area Planted** and **Area Harvested**

<p>Land Clearing (Col 3)</p> <p>Mostly bush clearance ...1 Mostly hand slashing2 Mostly tractor slashing ...3 Mostly burning4 No land clearing5</p>	<p>Improved seed Use (Col 7)</p> <p>all Improved1 approx 3/4 improved2 approx 1/2 improved3 approx 1/4 improved4 less than 1/4 improved ..5 No improved seed used.6</p>	<p>Fertiliser codes (Col 9)</p> <p>Mostly Farm Yard Manure 1 Mostly Compost2 Mostly Inorganic fertiliser ..3 No fertiliser applied4</p>	<p>Threshed/harvested (Col13 & 14)</p> <p>By hand1 By draft animal2 By human powered tool3 By engine driven machine...4 Not applicable9</p>	<p>Mostly sold to (Col 20)</p> <p>Neighbour.....01 Local market/trade store02 Secondary Market...03 Tertiary Market04 Marketing Coop05 Farmer Association06 Largescale farm07 Trader at Farm08 Contract Partner ...09 Did not sell10 Other98</p>	<p>Reason for difference between area planned and planted (Q7.1.3)</p> <p>Drought1 Floods2 Access to land preparation tools (Draft animal/tractors).3 Credit4 Access to seeds/planting material.....5 Access to other inputs6 Other8 Not applicable9</p>	<p>Reason for difference between area planted and harvested (Q7.1.4)</p> <p>Drought1 Rain/flood damage2 Fire damage3 Pest damage4 Animal damage5 Theft6 Illness/social problems7 Other8 Not applicable9</p>
<p>Soil preparation Method (Col 4)</p> <p>Mostly tractor ploughing .1 Mostly Oxen ploughing ..2 Mostly Hand cultivation ..3</p>	<p>Irrigation Use (Col 8)</p> <p>Used on all crop1 Used on 3/4 of crop2 Used on 1/2 of crop3 Used on 1/4 of crop4 Used on less than 1/45 Not used6</p>	<p>Agrochemical use codes (Col 10,11 & 12)</p> <p>Used on all crop1 Used on 3/4 of crop2 Used on 1/2 of crop3 Used on 1/4 of crop4 Used on less than 1/45 Not used6</p>	<p>Main product (Col 16)</p> <p>Dry Grain1 Green cob/green pod.....2 Green leaves & Stem.....3 Straw, dry stems etc4 Root, tuber, etc5 Flower eg pyrethrum6 Fruit/bunch7 Other8 Not harvested yet9</p>			

Definitions and working page for page 4

Working table for the calculation of area occupied by annual crop in a mixture

Crop mixture 1	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	(b)	(c)	(d)	(e)	(f)
Permanent crop 1			0.00		0 .
Permanent crop 2			0.00		0 .
Permanent crop 3			0.00		0 .
Permanent crop 4			0.00		0 .
Total Area of permanent crops in mix					0 .
REMAINING AREA UNDER TEMPORARY CROPS					
			crop%	crop area	
Temporary/permanent crop name 1					
Temporary/permanent crop name 2					
Temporary/permanent crop name 3					
Total area check			Crop total check		

Crop mixture 2	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	(b)	(c)	(d)	(e)	(f)
Permanent crop 1			0.00		0 .
Permanent crop 2			0.00		0 .
Permanent crop 3			0.00		0 .
Permanent crop 4			0.00		0 .
Total Area of permanent crops in mix					0 .
REMAINING AREA UNDER TEMPORARY CROPS					
			crop%	crop area	
Temporary/permanent crop name 1					
Temporary/permanent crop name 2					
Temporary/permanent crop name 3					
Total area check			Crop total check		

Land Clearing: Refers to removing trees/bush/grass prior to ploughing
Soil Preparation: Refers to the seedbed preparation (ploughing, harrowing, etc)
Planned Area: Area in Acres the household planned to plant before the season started
Actual Planted Area: The area in Acres the household was able to plant.
Area Harvested: The area in Acres that produced a harvest. This is the same as the area planted minus the area that was destroyed by major flood/pest/ animal/etc damage.

Temporary/Annual Crop:
 Crops which are planted and harvested within a period of 12 months after which time the plants die. Most annual crops are planted and harvested on a seasonal basis.

Crop Codes (Cereals /tubers/roots):

Code	Crop
11	Maize
12	Paddy
13	Sorghum
14	Bulrush Millet
15	Finger Millet
16	Wheat
17	Barley
22	Sweet Potatos
23	Irish potatoes
24	Yams
25	Cocoyams
26	Onions
27	Ginger

Vegetable Codes:

Co	Crop
-de	
86	Cabbage
87	Tomatoes
88	Spinach
89	Carrot
90	Chillies
91	Amaranths
92	Pumpkins
93	Cucumber
94	Egg Plant
95	Water Mellon
96	Cauliflower

Crop Codes Legumes Oil & fruit:

Code	Crop
31	Beans
32	Cowpeas
33	Green gram
35	Chick peas
36	Bambara nuts
37	Field peas
41	Sunflower
42	Simsim
43	Groundnut
47	Soyabeans
48	Caster seed

Cash Crop Codes:

Code	Crop
50	Cotton
51	Tobacco
53	Pyrethrum
62	Jute
19	Seaweed

Instructions for calculating the area of mixed crops in a mixture.

- If the mixed crop is mixed annual only enter the total area of the field in the REMAINING AREA UNDER TEMPORARY CROPS. and goto step 1 of these instructions.
- If the mixed crop is mixed permanent and annual try to get the % occupied by the different crops and calculate the area of annual crops outlined in step 1. Otherwise use the number of trees method to calculate the area of annual crops in the mix, Step C
- Number of trees method to calculate annual crop areas in a peranent-annual crop mix/
 - list each of the permanent crops in column b and enter the ground area per acre for each permanent crop (from instructions for page 6) in column 'd'.
 - obtain the number of permanent trees in the mix from the respondent and enter the number in column 'e'.
 - calculate the area occupied by each crop by multiplying column 'd' with column 'e' and sum these to obtain the total area of permanent crops in the mix.
 - subtract the total area of permanent crops in the mix from the total area of mix and enter the result in the total area under temporary crops.
 - proceed to step 1 to calculate the area under each temporary crop.

- Enter the name of each annual crop in the mix & estimate the percentage of each crop.
- Using the percentages for each crop calculate the area of each crop from the REMAINING AREA UNDER TEMPORARY CROPS.
- After completing this exercise for all fields, sum the area of each crop in the mix plus any monocrops and enter totals in section 7.1 col 6.
- Obtain an estimate of the planned area for each crop and enter it in column 5
- If the area harvested is different to the area planted estimate the harvest area
- Once the quantity harvested is obtained calculate the Yield (Metric tonnes/acre) & compare the figure with the norms given in the crop codes box. If it is excessively different check the area and the amount harvested.

7.2 ANNUAL CROP AND VEGETABLE PRODUCTION - LONG RAINY SEASON

7.2.1 Did the hh plant any crops during the LONG RAINY season? (Yes=1 No=2)

If the response is 'NO' give main reason

Then go to section 7.3

Main Reason (Above) No rains....1 Rains came too late2 Does not plant annual crops3
No money 4 Illness/social problems ..5

7.2.2 For each crop planted during 2002/03 Long Rainy season provide the following information

Crop Name	Crop Code	Land Clearing	Soil preparation	Planting		Inputs						How harvested	How threshed	Harvesting & Storage			Marketing		
				Planned area (acres)	Actual Planted area (acres)	% improved seed	Irrigation use	Fertiliser use	Herbicide use	Fungicide use	Pesticide use			Area Harvested (acres)	main product code	Quantity harvested (Kgs)	Quantity Stored (Kgs)	Quantity sold (kgs)	mostly sold to
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
.....																			
Total Planned/Planted						Total area harvested													

7.2.3 Main reason for difference between Area Planned and Area Planted

7.2.4 Main reason for difference between Area Planted and Area Harvested

<p>Land Clearing (Col 3)</p> <p>Mostly bush clearance ...1 Mostly hand slashing2 Mostly tractor slashing ...3 Mostly burning4 No land clearing5</p>	<p>Improved seed Use (Col 7)</p> <p>all Improved1 approx 3/4 improved....2 approx 1/2 improved....3 approx 1/4 improved....4 less than 1/4 improved ..5 No improved seed used.6</p>	<p>Fertiliser codes (Col 9)</p> <p>Mostly Farm Yard Manure 1 Mostly Compost2 Mostly Inorganic fertiliser ..3 No fertiliser applied4</p>	<p>Threshed/harvested (Col13 & 14)</p> <p>By hand1 By draft animal2 By human powered tool.....3 By engine driven machine...4 Not applicable9</p>	<p>Mostly sold to (Col 20)</p> <p>Neighbour.....01 Local market/trade store02 Secondary Market...03 Tertiary Market04 Marketing Coop ...05 Farmer Association06 Largescale farm ...07 Trader at Farm08 Contract Partner ...09 Did not sell10 Other98</p>	<p>Reason for difference between area planned and planted (Q7.2.3)</p> <p>Drought1 Floods2 Access to land preparation tools (Draft animal/tractors).3 Credit4 Access to seeds/planting material.....5 Access to other inputs6 Other8 Not applicable9</p>	<p>Reason for difference between area planted and harvested (Q7.2.4)</p> <p>Drought1 Rain/flood damage2 Fire damage3 Pest damage4 Animal damage5 Theft6 Illness/social problems7 Other8 Not applicable.....9</p>
<p>Soil preparation Method (Col 4)</p> <p>Mostly tractor ploughing .1 Mostly Oxen ploughing ..2 Mostly Hand cultivation ...3</p>	<p>Irrigation Use (Col 8)</p> <p>Used on all crop1 Used on 3/4 crop2 Used on 1/2 crop3 Used on 1/4 of crop.....4 Used on less than 1/4 ...5 Not used6</p>	<p>Agrochemical use codes (Col 10,11 &12)</p> <p>Used on all crop1 Used on 3/4 of crop2 Used on half of crop3 Used on 1/4 of crop4 Used on less than 1/45 Not used6</p>	<p>Main product (Col 16)</p> <p>Dry Grain1 Green cob/green pod.....2 Green leaves & Stem.....3 Straw, dry stems etc4 Root, tuber, etc5 Flower eg pyrethrum6 Fruit/bunch.....7 Others8 Not harvested yet9</p>			

Definitions and working page for page 5

Working table for the calculation of area occupied by annual crop in a mixture

Crop mixture 1	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	(b)	(c)	(d)	(e)	(f)
Permanent crop 1			0.00		0 .
Permanent crop 2			0.00		0 .
Permanent crop 3			0.00		0 .
Permanent crop 4			0.00		0 .
Total Area of permanent crops in mix					0 .
REMAINING AREA UNDER TEMPORARY CROPS					
				Temp crop%	Temp crop area
Permanent/Temporary crop name 1					
Permanent/Temporary crop name 2					
Permanent/Temporary crop name 3					
Total area check				Temporary crop total check	

Definitions and working page for page 5

Working table for the calculation of area occupied by annual crop in a mixture

Crop mixture 2	Crop Name	Total area of mix (acre)	Ground area/plant (ACRE)	Total no. of plants	Total ground area of plants (ACRES)
(a)	(b)	(c)	(d)	(e)	(f)
Permanent crop 1			0.00		0 .
Permanent crop 2			0.00		0 .
Permanent crop 3			0.00		0 .
Permanent crop 4			0.00		0 .
Total Area of permanent crops in mix					0 .
REMAINING AREA UNDER TEMPORARY CROPS					
				Temp crop%	Temp crop area
Temporary/permanent crop name 1					
Temporary/permanent crop name 2					
Temporary/permanent crop name 3					
Total area check				Temporary crop total check	

Land Clearing: Refers to removing trees/bush/grass prior to ploughing
Soil Preparation: Refers to the seedbed preparation (ploughing, harrowing, etc)
Planned Area: Area in **Acres** the household planned to plant before the season started
Actual Planted Area: The area in **Acres** the household was able to plant.
Area Harvested: The area in **Acres** that the household got most of its production from. This is the same as the area planted minus the area that was destroyed by major flood/pest/ animal/etc damage

Temporary/Annual Crop: Crops which are planted and harvested within a period of 12 months after which time the plants die. Most annual crops are planted and harvested on a seasonal basis.	Crop Codes (Cereals /tubers/roots): Code Crop 11 Maize 12 Paddy 13 Sorghum 14 Bulrush Millet 15 Finger Millet 16 Wheat 17 Barley 22 Sweet Potatos 23 Irish potatos 24 Yams 25 Cocoyams 26 Onions 27 Ginger	Vegetable Codes: Code Crop 27 Ginger 86 Cabbage 87 Tomatoes 88 Spinach 89 Carrot 90 Chillies 91 Amaranths 92 Pumpkins 93 Cucumber 94 Egg Plant 95 Water Mellon 96 Cauliflower 20 Garlic	Crop Codes Legumes Oil & fruit: Code Crop 31 Beans 32 Cowpeas 33 Green gram 35 Chick peas 36 Bambara nuts 37 Field peas 41 Sunflower 42 Simsim 43 Groundnut 47 Soyabeans 48 Caster seed
	Cash Crop Codes: Code Crop 50 Cotton 51 Tobacco 53 Pyrethrum 62 Jute 19 Seaweed		

Instructions for calculating the area of mixed crops in a mixture.

- If the mixed crop is mixed annual only enter the total area of the field in the REMAINING AREA UNDER TEMPORARY CROPS. and goto step 1 of these instructions.
- If the mixed crop is mixed permanent and annual try to get the % occupied by the different crops and calculate the area of annual crops outlined in step 1. Otherwise use the number of trees method to calculate the area of annual crops in the mix (Step C).
- Number of trees method to calculate annual crop areas in a perenent-annual crop mix
 - list each of the permanent crops in column b and enter the ground area per acre for each permanent crop (from instructions for page 6) in column 'd'.
 - obtain the number of permanent trees in the mix from the respondent and enter the number in column 'e'.
 - calculate the area occupied by each crop by multiplying column 'd' with column 'e' and sum these to obtain the total area of permanent crops in the mix.
 - subtract the total area of permanent crops in the mix from the total area of mix and enter the result in the total area under temporary crops.
 - proceed to step 1 to calculate the area under each temporary crop.

- Enter the name of each annual crop in the mix & estimate the percentage of each crop.
- Using the percentages for each crop calculate the area of each crop from the REMAINING AREA UNDER TEMPORARY CROPS.
- After completing this exercise for all fields, sum the area of each crop in the mix plus any monocrops and enter totals in section 7.1 col 6.
- Obtain an estimate of the planned area for each crop and enter it in column 5
- If the area harvested is different to the area planted estimate the harvest area
- Once the quantity harvested is obtained calculate the Yield (Metric tonnes/acre) & compare the figure with the norms given in the crop codes box. If it is excessively different check the area and the amount harvested.

7.3 PERMANENT/PERENNIAL CROPS AND FRUIT TREE PRODUCTION

7.3.1 Does your household have any permanent/perennial crops or fruit trees (Yes=1, No=2) 1

7.3.2 For each of the permanent crops and fruit trees owned by the household provide the following information

		Size of production unit				Inputs					Harvesting & Storage					Marketing		
Perm- anent Crop Name	Perman- ent crop/ fruit tree crop Code	MONOCROP		MIXED CROP		Irrig- -at -ion use	Fert- -ilis- -er use	Herb- -ic -ide use	Fun- -gic -ide use	Pest- -ici- -de use	Area Harvested (acres)	Number of mature plants	main prod- -uct code	Quantity harvested (kgs)	If no harvest give re- -ason	Quantity Stored (Kgs)	Quantity sold (kgs)	mostly sold to
		Area of Plants/ trees/Bushes in MONO CROP (acres)	Area covered by Permanent Crop in a MIXED CROP (acre)	Number of permanent Plants/trees in a MIXED CROP	(4)													
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		
.....																		

<p><u>Irrigation Use (Col 6)</u> Used on all crop1 Used on most crop2 Used on half crop3 Used on small amount of crop.4 Not used on crop5</p>	<p><u>Fertiliser codes (Col 7)</u> Mostly Farm Yard Manure.....1 Mostly Compost2 Mostly Inorganic fertiliser3 No fertiliser applied4</p>	<p><u>Agrochemical use codes (Col 8, 9 & 10)</u> Used on all crop1 Used on 3/4 of crop2 Used on 1/2. of crop3 Used on 1/4 of crop4 less than 1/4 of crop5 Not used6</p>	<p><u>Main product (Col 13)</u> Dry Grain.....1 Green cob/green pod..2 Green leaves & Stem..3 Straw, dry stems etc ...4 Root, tuber, etc5 Flower6 Fruit/bunch.....7 Other8 Not harvested yet9</p>	<p><u>Main Reason for no harvest(Col 15)</u> Crop not harvested yet1 Drought2 Rain/flood damage3 Fire damage4 Pest damage5 Animal damage6 Theft7 Other8 Not applicable9</p>	<p><u>Mostly sold to (Col 18)</u> Neighbour.....01 Local market/trade store....02 Secondary Market03 Tertiary Market04 Marketing Coop05 Farmer Association06 Largescale farm07 Trader at farm08 Contract Partner09 Did not sell10 Other98</p>
---	---	--	--	---	---

Definitions and working page for page 6

Permanent Crop:

Permanent crops: are sown or planted once and then , they occupy the land for some years and need not to be replanted after each annual harvest. Permanent crops are mainly trees (e.g., apples) but also bushes and shrubs (e.g., berries), palms (e.g., dates), vines (e.g., grapes), herbaceous stems (e.g., bananas) and stemless plants (e.g., pineapples).

Total number of plants:

This includes both mature harvestable plants and immature non harvestable plants.

Number of mature plants: This is the number of plants which bared harvest.

Instructions for Permanent crop mono stands and mixtures

- A.** For fields that are **monocrop permanent**, **ONLY** enter the **area of plants in column 3**.
- B.** For fields that are **mixed permanent** calculate the area of each crop based on the % **occupied by each crop method** (NOT using the number of trees method) and **ONLY** enter the area in **column 4**
- C.** For fields that are **mixed permanent/annual** either:
- **ONLY** enter the **area in column 4** if the area of the permanent crop was based on the % **occupied by each crop method**
- OR**
- **ONLY** enter the **number of trees in column 5** if the number of permanent crop plants was provided

Permanent crops (oils):

Code	Crop	Ground area/plant
44	Palm Oil	0.00049
45	Coconut	0.00037
46	Cashewnut	0.00062

Permanent (Cash crops)

Code	Crop	Ground area/plant
53	Sisal	0.00012
54	Coffee	0.00049
55	Tea	0.00037
56	Cocoa	0.00049
57	Rubber	0.00099
58	Wattle	0.00099
59	Kapok	0.00124
60	Sugar Cane	0.00012
61	Cardamom	0.00049
63	Tamarin	0.00099
64	Cinamon	0.00124
65	Nutmeg	0.00099
66	Clove	0.00074
18	Black Pepper	0.00037
34	Pigeon pea	0.00025
21	Cassava	0.00019
75	Pineapple	0.00006

Permanent Crops:

Code	Crop	Ground area/plant
70	Passion Fruit	0.00074
71	Banana	0.00037
72	Avocado	0.00099
73	Mango	0.00099
74	Papaw	0.00037
76	Orange	0.00074
77	Grapefruit	0.00074
78	Grapes	0.00012
79	Mandarin	0.00074
80	Guava	0.00074
81	Plums	0.00074
82	Apples	0.00074
83	Pears	0.00074
84	Peaches	0.00074
85	Lime/lemon	0.00074
68	Pomelo	0.00099
69	Jack fruit	0.00074
97	Durian	0.00074
98	Bilimbi	0.00074
99	Rambutan	0.00074
67	Bread fruit	0.00099
38	Malay apple	0.00074
39	Star fruit	0.00074

Working Area/calculation space

7.4 Main use of Secondary Products

7.5 Did you use **Secondary Products** from any of your crops during the 2002/03 year. (Yes=1, No=2)

If the response is 'NO' go to section 8.0

7.6 List the **main crops** with **secondary products** and provide the following details:

S/N	Crop name	Crop Code	Secondary product	Prod code	Used for	Unit	Total no of Units	No of units sold	Total value of sold units (Tsh.)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.6.1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.6.2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.6.3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.6.4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.6.5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
7.6.6	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Main product (Col 4)

Green leaves & Stem...1 Flower ...4
 Straw, dry stems etc ...2 Fruit5
 Root, tuber, etc3 Other8

Mainly used for (Col 5)

Feeding to livestock ..1 Consumed by hh4
 Building material2 Sold5
 Fuel for cooking3 Did not use.....6

Unit (Col 6)

Loose Bundle/bunch1 kg5
 Compressed bunch/Bail...2 Stems6
 Tin3 Sack7
 Bucket4 Other8

8.0 AGROPROCESSING AND BY-PRODUCTS

8.1 Did the household **process** any of the products harvested on the farm during 2002/03 (Yes=1, No=2)

If the response is 'NO' go to section 9.0

8.2 List the **main crops** processed and provide the following details:

S/N	Crop name	Crop Code	Proc-ess-ed	Main Prod-uct code	Used for	Unit	Quantity of main product	Quantity Sold	Where sold	By-Prod-uct code	Used for	Unit	Quantity of by-product	Quantity Sold
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
8.2.1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.2.2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.2.3	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.2.4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.2.5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
8.2.6	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Processed (Col 3)

On farm by hand1
 On farm by machine2
 By neighbours machine...3
 By farmers association ...4
 By Cooperative union5
 By trader6
 On Large scale farm7
 By factory9
 Other8

Main product code (Col 4)

Flour/meal.....1
 Grain2
 Oil3
 Juice4
 Fiber.....5
 Pulp6
 Sheet7
 Other8

Used for (Col 5 & 11)

Household/human consumption ..1
 Fuel for cooking2
 Sale3
 Animal consumption4
 Did not use5
 Other8

Where sold (Col 9)

Neighbour.....1
 Local market/trade store2
 Secondary Market3
 Marketing Coop4
 Farmer Association5
 Largescale farm6
 Trader at farm7
 Did not sell9
 Other8

By-product code (Col 10)

Bran01
 Cake02
 Husk03
 Juice04
 Fiber05
 Pulp06
 Oil07
 Shell08
 Other98

Unit (Col 6 & 12)

Loose bundle/bunch1
 Compressed bunch/bail...2
 Tin3
 Bucket4
 kg5
 litre6
 Other8

Definition and working page for page 7					
Temporary/annual crop codes for section 7.4 col 2					General Definition for Section 7.4
Crop Code	Crop Name	Secondary Product Question 7.4	Agroprocessing & bi-products		
			Main Products (Section 8.0)	Bi-product (Sect 8.0)	
			1	2	
11	Maize	Stems/straw	Flour	Bran	
12	Paddy	Stems/straw	polished rice grain	husk	
13	Sorghum	Stems/straw	flour		
14	Bulrush Millet	Stems/straw	flour		
15	Finger Millet	Stems/straw	flour		
16	Wheat	Stems/straw	flour	Bran	
17	Barley	Stems/straw	flour	Bran	
21	Cassava	Leaves/stems	flour		
22	Sweet Potatoes	Leaves			
23	Irish potatoes				
24	Yams				
25	Cocoyams				
26	Onions				
27	Ginger				
31	Beans	straw/stems			
32	Cowpeas	straw			
33	Green gram	straw			
34	Pigeon peas	stems			
35	Chick peas	straw			
36	Bambara nuts	straw/stems	oil	cake	
41	Sunflower	Stems	oil	Cake	
42	Simsim	straw	oil	Cake	
43	Groundnut	straw	oil	Cake	
47	Soya beans	straw	oil	Cake	
48	Caster seed	straw	oil	Cake	
75	Pineapple		Juice		
50	Cotton	straw	fibre/seed	oil	cake
51	Tobacco				
53	Pyrethrum	straw	insecticide		
62	Jute		fibre		
86	Cabbage				
87	Tomatoes				
88	Spinach				
89	Carrot				
90	Chillies		dried powder		
91	Amaranths				
92	Pumpkins	leaves			
93	Cucumber				
94	Egg Plant				
95	Water Mellon				
96	Cauliflower				
44	Oil Palm	leaves	oil outer	oil inner	cake
45	Coconut	leaves/husk	milk		
46	Cashewnut	Fruit	fruit juice	shell liquid	
52	Sisal	stems	fibre	oil	
54	Coffee	stems	beans	husks	
55	Tea	stems			
56	Cocoa	stems	cocoa	cocoa butter	
57	Rubber	stems			
58	Wattle	stems			
59	Kapok	stems			
60	Sugar Cane		sugar/juice	molasses	ethanol
61	Cardamom				
71	Banana	leaves/stems	juice		
72	Avocado	stems			
73	Mango	stems	Juice		
74	Paw paw		Juice		
76	Orange	stems	Juice		
77	Grape fruit	stems	Juice		
78	Grapes	stems	Juice		
79	Mandarin	stems	Juice		
80	Guava	stems			
81	Plums	stems			
82	Apples	stems			
83	Pears	stems			
84	Pitches	stems			
85	Lime/Lemon	stems	juice		

General Definition for Section 7.4

Secondary Products: Second most important product from a crop. Eg a household may consider the grain from maize as the primary product and the stems/straw as the secondary product.

Note: Secondary products are NOT the same as bi-products. By-products are the result of a processing activity and are dealt with in section 8.0.

Procedures for Questions

Q 7.6 Details of Secondary Products:

- From the list of crops in Q 7.1.2, 7.2.2 & 7.3.2, ask the respondent if the hh used any secondary products. List the crop names and codes in column 1 and 2 for those crops that the hh used secondary products.
- For the listed crops give details of the secondary products used.
- If no units were sold, enter "0" in columns 8 & 9.

Q 8.0 Agroprocessing & bi-products:

- From the list of crops in Q 7.1.2, 7.2.2 & 7.3.2, ask the respondent if the hh processed any of these crops during the 2002/03 agriculture year. List the crop names and codes in column 1 and 2 for those crops that were processed by the hh.
- For the listed crops give details of the secondary crops used.
- If no main product or bi-product was sold enter "0" in columns 8 & 14.
- If no bi-product was produced enter "0" in columns 10, 11, 12, 13 & 14.

Question Specific Definitions

Agroprocessing and bi-products (Q 8.2)
(Note: Agroprocessing refers to the processing of crops for hh utilisation and for sale)

Main Product (Col 5):

Main Product after processing. Eg for Paddy it may be the polished grain. For Maize it may be flour.

Bi-Product code (Col 11): is the secondary residue after processing, eg for rice it may be the husk. for maize it may be the bran.

Mainly used for (Col 5 & 11):

- Consumed by household can mean eaten or utilised in another way (eg by animals) by the hh.

9.0 CROP STORAGE							
9.1	Did the household store any crops during the 2002/03 agriculture year? (Yes =1, No=2) <input style="float:right;" type="checkbox"/>						
<i>If the response is 'NO' go to section 10.0</i>							
9.2 For each of the listed crops provide the following details on storage							
S/N	Crop Name	Stor- ed Y=1 No=2	Current Quantity Stored (kg)	Method of Storage	Normal duration of storage	Main pur- pose	Estimate
							Estimate Storage loss
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
9.2.1	Maize	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.2	Paddy	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.3	Sorghum/Millet	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.4	Beans, peas, etc	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.5	Wheat	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.6	Coffee	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.7	Cashewnut	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.8	Tobacco	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.9	Cotton	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2.10	Groundnuts/bambara	<input type="checkbox"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Main method of Storage (Col 4)

In locally made traditional structure..1
 In Improved locally made structure .2
 In modern store3
 In Sacks/open drum.....4
 In airtight drum5
 Unprotected pile6
 Other8

Duration of Storage (Col 5)

Less than 3 months1
 Between 3 and 6 months2
 Over 6 months3

Main purpose of storage (Col 6)

Food for the household1
 To sell for higher price2
 seed for planting.....3
 Other8

Storage loss (Col 67)

Little or no loss1
 Up to 1/4 loss2
 Between 1/4and 1/2 loss ..3
 Over 1/2 loss4

10.0 MARKETING							
10.1	Did the household sell any crops from the 2002/03 agriculture year? (Yes=1, No=2) <input style="float:right;" type="checkbox"/>						
<i>(If the response is 'YES' or 'NO' go to section 10.2)</i>							
10.2 For each of the following crops what was the main marketing problem faced by the household during 02/03							
	Crop	Main problem		Crop	Main problem	10.3 From the list of marketing problems below, for all produce rank the five most important problems	
	(1)	(2)		(1)	(2)		
10.2.1	Maize	<input type="checkbox"/>	→	10.2.9	Vegetables	<input type="checkbox"/>	
10.2.2	Rice	<input type="checkbox"/>		10.2.10	Tree Fruits	<input type="checkbox"/>	
10.2.3	Sorghum/millet	<input type="checkbox"/>		10.2.11	Cashewnut	<input type="checkbox"/>	10.3.1
10.2.4	Wheat	<input type="checkbox"/>		10.2.12	Cotton	<input type="checkbox"/>	10.3.2
10.2.5	Beans, peas etc	<input type="checkbox"/>		10.2.13	Tobacco	<input type="checkbox"/>	10.3.3
10.2.6	Cassava	<input type="checkbox"/>		10.2.14	Groundnuts/bamabara	<input type="checkbox"/>	10.3.4
10.2.7	Bananas	<input type="checkbox"/>		10.2.15	Trees/timber/poles	<input type="checkbox"/>	10.3.5
10.2.8	Coffee	<input type="checkbox"/>		10.2.16	Fish	<input type="checkbox"/>	

Market problems (Q10.2 & 10.3 (Col 2))

Open market price too low01 Market too far05 Government Regulatory board problems...09
 No transport02 Farmer association problems06 Lack of market Information10
 Transport cost too high03 Cooperative Problems07 Other (specify)98
 No buyer04 Trade Union problems08 Not Applicable99

10.4	What was the main reason for not selling crops during 2002/03 year <input style="float:right;" type="checkbox"/>						
Reason for not selling crops (Q10.4)							
Price too low1 Farmer association problems4 Government regulatory board problems7 Production insufficient to sell.....2 Cooperative Problems.....5 Other (specify)8 Market too far3 Trade Union problems6 Not Applicable9							

Definition and working page for page 8**Question Specific definitions (Section 9.0)****Crop Storage, Section 9****Method of Storage (column 4)**

- **Locally made structure:** The structures that have been inherited from their fore fathers
- **Improved locally made structure:** Traditional structures that have been improved using modern technology.
- **Normal duration of storage:** Often there are stored stocks from different seasons and different years. The normal duration refers to the number of months that the most of the crop is stored for.

Marketing problems Q 10.2 and 10.3 col 2:

- **Farmer Association:** A village or community based group of farmers who have formed an organisation to purchase inputs/sell/store their products in order to achieve a better price for their products.
- **Cooperative Union:** Large inter-village /community organisation set up on a district/regional or national basis for providing inputs, marketing and storing farmers products.
- **Government Regulatory board:** Government control body for setting prices and controlling quality of certain agriculture commodities.

Procedures for Questions**Q 9.2 Details of Crop Storage:**

1. For the crops listed indicate if the household stored any during 2002/03 in column 2.
2. Check that the crops correspond to the crop lists in Q 7.1.2, 7.2.2 & 7.3.2. If there is a difference inquire on the reason why. It is possible that a crop was missed during the enumeration of these questions and if so make necessary amendments
3. For the listed crops give details of storage.

Q 10.2 Details on Crop Marketing:

1. For each of the crops listed indicate the main problems in marketing during 2002/03 in column 2.
2. Check if the crops correspond to the crop lists list in Q 7.1.2, 7.2.2 & 7.3.2. If there is a difference inquire on the reason why. It is possible that a crop was missed during the enumeration of these questions and if so make necessary amendments

Q 10.3 Ranking of market problems:

Rank in order of importance the 5 most important marketing problems from the codes in the Market Problems code box.

Working Area/calculation space

11.0 ON-FARM INVESTMENT								
11.1 Does the household practice irrigation (Yes=1, No=2) <input style="float:right" type="checkbox"/>								
<i>If the response is 'NO' go to section 11.3</i>								
S/N	Source of Irrigation water	Method of obtaining water	Method of application	Irrigatable area (acres)	Area of irrigated land this year (acres)			
	(1)	(2)	(3)	(4)	(5)			
11.1.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>			
Source of irrigation water (Col 1) River1 Borehole5 Lake2 Canal6 Dam3 Tap Water7 Well4			Method of obtaining water (Col 2) Gravity1 motor pump4 Hand bucket2 Other8 Hand pump3		Method of application (Col 3) Flood1 Sprinkler2 water hose.....3 Bucket/watering can4			
11.2 Does the household have any erosion control/water harvesting facilities on their land (Yes=1, No=2) <input style="float:right" type="checkbox"/>								
<i>If the response is 'NO' go to section 12.0</i>								
S/N	Type of erosion control/water harvesting structure	Number of structures	Year of construction		Type of erosion control/water harvesting structure	Number of structures	Year of construction	
	(1)	(2)	(3)		(1)	(2)	(3)	
11.2.1	Terraces	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	→	11.2.5	Tree belts	<input type="text"/> <input type="text"/>	
11.2.2	Erosion control bunds	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>		11.2.6	Water harvesting bunds	<input type="text"/> <input type="text"/>	
11.2.3	Gabions/Sandbags	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>		11.2.7	Drainage ditches	<input type="text"/> <input type="text"/>	
11.2.4	Vetiver Grass	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>		11.2.8	Dam	<input type="text"/> <input type="text"/>	

12.0 ACCESS TO FARM INPUTS AND IMPLEMENTS									
12.1 Give details of farm inputs used during the 2002/03 agriculture year									
S/N	Input name	Used Yes=1 No=2	Source	Distance to Source	Source of Finance	Reason for not using	Quality of Input	Plan to use next year Yes =1,No=2	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
12.1.1	Chemical Fertiliser	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.1.2	Farm Yard Manure	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.1.3	Compost	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.1.4	Pesticide/fungicide	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.1.5	Herbicide	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.1.6	Improved Seeds	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12.1.7	Other	<input type="checkbox"/>	<input type="text"/> <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Source (Col 3) Cooperative01 Local farmers group02 Local market/Trade Store ...03 Secondary Market04 Development project05 Crop buyers06 Large scale farm07 Locally produced by hh08 Neighbour09 Other (specify)98 Not applicable99		Distance to source (Col 4) Less than 1 Km1 Between 1 and 3km2 between 3 and 10 km...3 Between 10 and 20 km ...4 20km and above5 not applicable9		Source of finance (Col 5) Sale of farm products .1 Other income generating activities ...2 Remittances3 Bank Loan/Credit4 produced on farm5 Other8 Not applicable9		Reason for not using (Col 6) Not available1 Price too high2 No money to buy3 Too much labour required..4 Do not know how to use...5 Input is of no use6 Locally produced by hh7 Other8 Not applicable9		Quality of input (Col 7) Excellent1 Good2 Average3 Poor4 Does not work .5 not applicable...9	

Definition and working page for page 9

Overview of Investment activities (Section 11.0)

Investment activities:

Investment activities refer to medium to long term farm development structures and projects. This can be Irrigation structures, erosion and water harvesting structures or other permanent or semi-permanent investment made on the land that the household owns.

Question Specific Definitions (Q 11.1)

Source of irrigation Water (Col 1): The main source of water from which water is obtained for irrigation.

Method of obtaining water (Col 2): The mechanism by which the water is extracted from the source,

Application Method (Col 3): How the water is applied on the field.
 - Flood - is the application of water down the slope of the land by means of gravity
 - Sprinkler - is the application of pressurised water through pipes. The water passes through a device which sprays the water onto the crop from above.

Irrigatable Area (Col 4): The area the irrigation system is designed to cover in acres.

Area of irrigated land this year (Col 5): Area of land under irrigation during the 2002/03 agric year. This is the physical area and NOT the cumulative area of 2 or more croppings.

Q 11.1 Irrigation

1. If the hh practices irrigation give details on the main source, main method of obtaining and applying water.
2. Cross check column 8, Q 7.1.2, 7.2.2 & 7.3.2 to check if irrigation was used on any crops.

Question Specific Definitions (Q 11.3)

Erosion control/water harvesting structure (Col 1)

Terraces: Are structures constructed on the side of a hill to provide a level ground to plant crops. They are often used to trap water for paddy/lowland rice production.

Erosion Control Bunds: These are banks of earth/stones built perpendicular to the slope to slow down water and prevent erosion. They are different to Terraces in that the soil behind the banks are not level.

Gabions: A gabion is a wire mesh box filled with rocks/stones and used to control or prevent gully erosion

Sandbags Used to prevent or control gully erosion

Tree belts/Wind breaks: A band of trees planted perpendicular to the prevailing wind whose main purpose is to slow down wind speed

Water Harvesting bunds: A bank of earth constructed horizontal to the slope of the land to trap water. They are usually banana shaped.

Dam: A bank of earth/material which traps river water to form a catchment of water behind it.

Q 11.3 erosion control/water harvesting

1. Number of structures refers to the number of working/maintained structures and does not include derelict or irreparable structures.
2. Year of construction refers to the year that the structures were first constructed. It is not the year that the structures were last maintained.

Farm Inputs (Q 12.1.1 to 12.1.7)

Farm yard Manure: An organic fertiliser made on farm composed of animal dung.

Compost: An organic fertiliser made on farm from decomposed plant material

Pesticide: Chemical used to either protect the plant from or kill insects, birds, molluscs, mites, etc attacking the plant

Fungicide: is a chemical that is used to protect the plant from or control a fungal disease.

Herbicide: A chemical used to control weeds.

Q 12.0 Farm Inputs

1. Indicate in column 1 whether each of the inputs are used or not.
2. Complete cols 3, 4, 6, and 7 for inputs that are used and place '9' in column 5 (for not applicable).
3. Complete cols 5 & 7 for inputs not used.

NOTE: Cross check column 6, 7, 8 & 9, Q 7.1.2, 7.2.2 & 7.3.2 to check what inputs were used.

12.2 Give details of farm implements and assets used and owned by the household during 2002/03 agriculture year									
S/N	Equipment/Asset Name	Number		Used in 2002/03 Yes 1, No=2	Source of Equip-ment	Source of Fin-ance	Reason for not using	Plan to use next year Yes=1, No=2	
		Owned	rent-ed						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
12.2.1	Hand Hoe	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.2	Hand Powered Sprayer	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.3	Oxen	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.4	Ox Plough	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.5	Ox Seed Planter	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.6	Ox Cart	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.7	Tractor	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.8	Tractor Plough	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.9	Tractor Harrow	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12.2.10	Shellers/threshers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
		Source of equipment (Col 5) Neighbour.....1 Development project5 Cooperative2 Government6 Local farmers association.....3 Large scale farm7 market/Trade store4 Other (specify)8			Source of finance (Col 6) Sale of farm products1 Other income generating activities .2 Remittances3 Bank Loan4 Credit5 Other8 Not applicable9		Reason for not using (Col 7) Not available1 Price too high2 No money to buy/rent.....3 Too much labour required...4 Equipment/Asset of no use ...5 Other8 Not applicable9		
13.0 USE OF CREDIT FOR AGRICULTURE PURPOSES									
13.1	During the year 2002/03 did any of the hh members borrow money for agriculture (Yes = 1, No = 2) (if the response is 'NO' go to section 13.3)							<input type="text"/>	
13.2 Give details of the credit obtained during the agricultural year 2002/03 (if the credit was provided in kind , for example by the provision of inputs, then estimate the value in 13.2.9)									
	use codes to indicate source	Source "a"		Source "b"		Source "c"			
	Provided to Male = 1, Female 2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
		tick the boxes below to indicate the use of the credit		tick the boxes below to indicate the use of the credit		tick the boxes below to indicate the use of credit			
13.2.1	Labour	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.2	Seeds	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.3	Fertilisers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.4	Agrochemicals	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.5	Tools/equipment	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.6	Irrigation structures	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.7	Livestock	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.8	Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.9	Value of Credit (Tsh.)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.10	Value of repayment (Tsh.)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
13.2.11	Period of repayment (months)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Source of credit (Q 13.2-a, b and c) Family, friend or relative...1 Commercial Bank.....2 Cooperative3 Savings & credit Soc4 Trader/trade store5 Private individual6 Religious Organisation/NGO/Project ...7 Other (Specify).....8									
13.3	If the answer to question 13.1 above is 'NO' what is the reason for not using Credit?							<input type="text"/>	
Reason for not using credit (Q13.3) Not needed ...1 Not available ...2 Did not want to go into debt....3 Interest rate/cost too high.....4 Did not know how to get credit....5 Difficult bureaucratic procedure ...6 Credit granted too late ...7 Other (specify) ...8 Dont know about credit9									

Definition and working page for page 10

Question Specific Definitions (Q 12.2)

Farm Implements (Col 1):

Hand powered Sprayer: Knapsack or bicycle pump sprayer

Reason for not using (Col 6): Be careful about using "too much labour required" as this code generally refers to hand hoes only. The codes for this should "**NOT**" be read out to the farmer as a prompt.

Note: If remittance is given as the main source of finance check for a response to remittances in **question 2.2.5**

Procedures for questions

Q 12.0 Farm Inputs

1. Indicate in column 2 and 3 whether each of the implements were used or not.
2. Complete cols 4, 5, 6, and 8 for inputs that are used and place '9' in column 7 (for not applicable).
3. Complete cols 7 & 8 for inputs not used.

Question Specific Definitions (Q 13.0)

Section 13.0 Credit for Agriculture Purposes

Credit is defined as finance in the form of cash or in-kind contributions (eg direct provision of inputs, machinery, livestock or other material) for the purpose of crop and livestock production whereby the value of the credit must be paid back to the borrower. The value of repayment may either be with interest or interest free.

Credit may be paid back in the form of cash or agriculture produce.

Section 13.0 Credit for Agriculture Purposes

Value of credit: is the amount in cash received from the borrower. If the credit was paid in-kind, estimate the value of this.

Value of repayment: This is the amount to be repaid to the borrower and includes the principal amount (value of credit) plus any interest repayment. If the credit is paid back in agriculture produce, then the cash value of this must be estimated.

Period of repayment: This is the time in months the borrower has given for full repayment.

Section 13.2 Source of agriculture credit

If the farmer obtained credit from more than one source then use the columns "a", "b" and "c" for the different sources of credit. Start with the main source of credit in column "a".

NOTE: Check for use of inputs in column 7, 8 & 9 of questions 7.1.2, 7.2.2 & 7.3.2.

Working Area/calculation space

Large empty rounded rectangular area for working area/calculation space.

14.0 TREE FARMING/AGROFORESTRY										
14.1	Did your household have any Planted Trees on your land during 2002/03 agric year? (Yes =1, No=2)									<input type="checkbox"/>
<i>If the response is 'NO' go to section 14.3</i>										
14.2 Give details of the planted trees you have on your land.										
S/N	Tree Code	Number of trees	Where planted	Main Use	Secondary Use	Number of Plank trees Sold	Number of Pole trees Sold	hh utilised		Total Value (Tsh.)
								Number of Poles	Number of Timber	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
14.2.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.2.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.2.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.2.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Where Planted (Col 3)						Use (Col 4 & 5)				
Mostly on field/plot boundaries.....1						Planks/Timber.....1 Shade5				
Mostly scattered in fields2						Poles2 Medicinal.....6				
Mostly in plantation/coppice ...3						Charcoal3 Other8				
Fuel wood4										
14.3	Does your village have a Community tree planting scheme (Yes=1, No=2)									<input type="checkbox"/>
<i>If the response is 'NO' go to section 15.0</i>										
14.4 Household involvement in community tree planting scheme										
S/N	Distance to community planted forest (Km)	hh Involvement	Main purpose	Main use during 2002/03						
	(1)	(2)	(3)	(4)						
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
HH involvement (Col 2)			Main Purpose (Col 3)			Main Use during 02/03(Col 4)				
Only planting1			Erosion control.....1 Environment rehabilitation ...4			Poles1 Not ready to use5				
Only protection and thinning.....2			Production of poles2 Restoration of wildlife5			Timber logs2 Not allowed to use6				
Only cutting3			production of firewood...3 Other (specify)8			Charcoal3 Other (specify)8				
Most or all activities.....4						Firewood4				

15.0 CROP EXTENSION SERVICES							
15.1	Did your household receive extension advice for crop production during 2002/03 (Yes=1, No=2)						<input type="checkbox"/>
<i>If the response is 'NO' go to section 16.0</i>							
S/N	Extension Provider	Source of extension (Y=1,N=2)	If you pay for extension, what is the cost/yr	Contact farmer /group member (Yes=1, No=2)	No. of visits by extension agency per year	No. of message adopted in the last 3 years	Quality of Service
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
15.1.1	Government extension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.2	NGO/development project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.3	Cooperative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.4	Large Scale farmer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.1.5	Other.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quality of service (Col 7)							
Very good1 good2 Average.....3 Poor.....4 No Good5							

Definition and working page for page 11

General Definitions for section 14.0

Tree Farming/Agroforestry

This section refers to trees **planted** for wood (firewood, poles, planks, carving, charcoal, medicinal, etc, but **NOT** fruit trees). It does **not** include naturally growing trees on the farm (unless special care has been given to promote their establishment) or trees growing naturally on the communal areas.

Tree farming is the planting of trees on an area of land for which the main purpose is the production and regeneration of trees for wood on that land.

Agroforestry: is the planting of trees on land for the purpose of complementing other farming activities like crop and animal production. For the purpose of this questionnaire Agroforestry trees are trees planted on boundaries and scattered throughout fields. The main productive unit in this case is Crops and Livestock.

Section 14.2 Details of planted trees

1. Enter the tree codes of the main species grown by the hh
2. If no planks or poles are sold enter a "0" in columns 8, & 9.
3. Total value includes both value of hh utilised trees and sold trees.
4. If no trees were utilised by the hh or sold enter "0" in column 10

Question Specific Definitions

Tree farming (Section 14.0)

Pole trees (Col 6): These are young trees which have a maximum diameter of 6 inches at the bottom and are often used for house construction. They are often the thinning harvest after 3 - 5 years.

Plank trees (Col 7): Trees for sawing into timber planks.

Animal shade: Trees grown for the purpose of providing shade to animals.

Community tree planting scheme (Section 14.3)

Community Forest: A forest planted on the communal land which is planted, replanted or spot planted by the members of the village.

Crop Extension Services (Section 15.1)

Contact Farmer: A farmer who is used by the extension agent as a focal point to demonstrate new interventions. The contact farmer then passes on the message to other farmers

Group member: Member of a group under which the contact farmer leads

Adoption: This is the uptake of an intervention for 2 or more years

Section 15.1 Crop Extension Services

1. For each of the extension providers ask if the hh received extension during 2002/2003 agriculture year and indicate in column 2.
2. For each of the providers complete the rest of the columns

Tree Name Guide Col 1

Code	Local Name	Botanical Name	English Name
01		<i>Senna siamea</i>	Cassod tree
02	Msongoma	<i>Gravellia</i>	Silver oak
03	Mbarika	<i>Azelia quanzensis</i>	Pod mahogany
04	Mkeshia	<i>Acacia spp</i>	Umbrella thorn
05	Msindano	<i>Pinus spp</i>	Pine
06	Mkaratusi	<i>Eucalyptus spp</i>	Red River Gum
07		<i>Cyprus spp</i>	Cyprus tree
08	Mtndoo	<i>Calophyllum inophyllum</i>	
09	Mvule	<i>Melicia excelsa</i>	Iroko
10	Mvinji	<i>Casurina equisetifolia</i>	Whistling oak
11	Msaji	<i>Tectona grandis</i>	Teak
12	Mkungu wa kienyeji	<i>Terminalia catapa</i>	Sea almond
13	Mkungu india	<i>Terminilia ivorensis</i>	Black afara
14	Muhumula	<i>Maesopsis berchemoides</i>	
15			

Code	Local Name	Botanical Name	English Name
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

15.2 Crop Extension Messages									
S/N	Extension Message	Received Advice Yes=1 No=2	Adopted Yes=1 No=2	Source of Crop Extension	S/N	Extension Message	Received Advice Yes=1 No=2	Adopted Yes=1 No=2	Source of Crop Extension
	(1)	(2)	(3)	(4)		(1)	(2)	(3)	(4)
15.2.1	Spacing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.9	Crop Storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.2	Use of agrochemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.10	Vermin control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.3	Erosion control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.11	Agro-processing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.4	Organic fertiliser use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.12	Agro-forestry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.5	Inorganic fertiliser use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.13	Bee Keeping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.6	Use of improved seed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.14	Fish Farming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.7	Mechanisation/LST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15.2.15	Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.2.8	Irrigation Technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Source of extension (Col 4) Government1 NGO/Dev project ..2 Cooperative ...3 Large scale farmer4 Other (Specify) ...8 Not applicable9									

16.0 LIVELIHOOD CONSTRAINTS				
From the list of constraints on the right select:				List of constraints
16.1	the 5 most important problems		16.2	the 5 least important problems
	Order of most importance	Constraint		Order of least importance
	(1)	(2)		(1)
16.1.1	most important	<input type="checkbox"/>	16.2.1	Least important
16.1.2	2nd most important	<input type="checkbox"/>	16.2.2	2nd least important
16.1.3	3rd most important	<input type="checkbox"/>	16.2.3	3rd least important
16.1.4	4th most important	<input type="checkbox"/>	16.2.4	4th least important
16.1.5	5th most important	<input type="checkbox"/>	16.2.5	5th least important
17.0 ANIMAL CONTRIBUTION TO CROP PRODUCTION				
17.1	Did you use Draft animals to cultivate your land during 02/03 (Yes=1, No=2) <input type="checkbox"/>			
(If no, go to question 17.2)				
S/N	Type of Draft	Number owned	Number used	Area cultivated (acres)
	(1)	(2)	(3)	(4)
17.1.1	Oxen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.1.2	Bulls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.1.3	Cows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.1.4	Donkeys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17.2	Did you apply organic fertiliser during 02/03 (Yes=1, No=2) <input type="checkbox"/>			
(If no, go to question 18)				
S/N	Type of organ Fertiliser	Area applied (acres)		
	(1)	(2)		
17.2.1	FYM	<input type="checkbox"/>		
17.2.2	Compost	<input type="checkbox"/>		

1. Access to Land
2. Ownership of Land
3. Poor farm Inputs
4. Soil Fertility
5. Access to improved seed
6. Irrigation facilities
7. Access to chemical Inputs
8. Cost of Inputs
9. Extension Services
10. Access to forest resources
11. Hunting and Gathering
12. Access to potable water
13. Access to credit
14. Harvesting
15. Threshing
16. Storage
17. Processing
18. Market Information
19. Transport costs
20. Distraction by animals
21. Stealing
22. Pests and Diseases
23. Local government taxation
24. Access to off Farm Income

Definitions and working page for page 12

Question Specific Definitions

Crop Extension Advice (Section 15.2)

Mechanisation/LST: LST means Labour Saving Technology

Section 16.0 Livelihood constraints

16.1 List the five most important problems in order of most importance:

1. Read out the list of constraints to the respondent and ask him to select the ones that are a problem. Place a ✓ against the constraints that are a problem.
2. Read the selected constraints and ask the farmer to select 5 which create the largest problems
3. Ask the farmer to list these in order of importance and enter in column 2

16.2 List the five least important problems in order of least importance:

1. Read out the list of constraints to the respondent and ask him to select the ones that are **NOT** a problem. Place an ✗ against the constraints that are **NOT** a problem.
2. Read the selected constraints and ask the farmer to select 5 which create the least problems
3. Ask the farmer to list these in order of least importance and enter in column 2

18.0 CATTLE POPULATION, INTAKE AND OFFTAKE															
18.1 Did the household own, raise or manage any CATTLE during 2002/03 agriculture year? (Yes =1 No =2) <input type="checkbox"/>															
(If no go to section 19.0)															
18.2 Cattle Population as of 1st October 2003					18.3 Cattle Intake during 2002/2003										
S/N	Cattle type <i>(1)</i>	Number of Indigenous <i>(2)</i>	Number of Improved		Total <i>(5)</i>	S/N	Number Purchased <i>(6)</i>	Number given /obtained <i>(7)</i>	Number Born <i>(8)</i>	Total Intake of Cattle <i>(9)</i>	Average Value per head <i>(10)</i>				
			Beef <i>(3)</i>	Dairy <i>(4)</i>											
18.2.1	Bulls	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.3.1	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
18.2.2	Cows	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.3.2	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
18.2.3	Steers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.3.3	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
18.2.4	Heifers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.3.4	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
18.2.5	Male Calves	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.3.5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
18.2.6	Female Calves	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.3.6	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
Grand Total					<input type="text"/>	Total Intake					<input type="text"/>				
18.4 Cattle Offtake during 2002/2003								18.5 Cattle diseases							
S/N	Cattle type <i>(1)</i>	Number Sold/traded <i>(2)</i>	Number con sumed by hh <i>(3)</i>	Number given away/stolen <i>(4)</i>	Number died <i>(5)</i>	Total Cattle Offtake <i>(6)</i>	Average value per head <i>(7)</i>	S/N	Disease/ parasite <i>(1)</i>	Number Infected <i>(2)</i>	Number Treated <i>(3)</i>	No. Rec -overed <i>(4)</i>	Number Died <i>(5)</i>	Last vacci nated <i>(6)</i>	Main Sou -rce <i>(7)</i>
18.4.1	Bulls	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.5.1	Tick Borne diseases	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
18.4.2	Cows	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.5.2	CBPP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
18.4.3	Steers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.5.3	Trypanosomias s	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
18.4.4	Heifers	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.5.4	Lumpy Skin Disease	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
18.4.5	Male Calves	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.5.5	Helmenthioit is	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
18.4.6	Female Calves	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	18.5.6	FMD	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Total Offtake						<input type="text"/>	<p><u>Last Vaccinated (Col 6)</u></p> <p>20031 20004 20022 before 20005 20013 Not Vaccinated...6</p> <p><u>Main Source of vaccine (Col 7)</u></p> <p>Private Vet Clinic ..1 Other8 District Vet Clinic ..2 Not applicable9 NGO/Project.....3</p>								
18.6 Milk Production							<p><u>Sold to Q18.6 Col 5)</u></p> <p>Neighbour.....1 Largescale farm ..5 Local Market.....2 Trader at Farm ...6 Secondary Market ...3 Did not sell7 Processing industry .4 Other8</p>								
S/N	Season <i>(1)</i>	Litres of milk/day <i>(2)</i>	No. of cattle milked/day <i>(3)</i>	Value/litre <i>(4)</i>	Sold to <i>(5)</i>	Sold/day (Litres) <i>(6)</i>									
18.6.1	Wet Season	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>									
18.6.2	Dry Season	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>									

Definitions and working page for page 13**General definitions for page 13**

Cattle Intake during 2002/03: Cattle purchased, given or born which increases the number of cattle in the herd.

Cattle Offtake during 2002/03:

Cattle removed from the herd, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 18.0)**Cattle type (Q 18.2 & 18.4, Col 1)**

Bull: Mature **Uncastrated** male cattle used for breeding

Cow: Mature female cattle that has given birth at least once

Steer: Castrated male cattle over 1 year

Heifer: Female cattle of 1 year up to the first calving

Calves: Young cattle under 1 year of age

Average Value per Head (Q 18.3, (Col 7 & 9) & 18.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Cattle vaccination (18.5 col 1)

ECF: East Coast Fever

FMD: Foot and Mouth Disease

CBPP: Contagious Bovine Pleura Pneumonia

Section 18.0 Cattle Population, Intake & Offtake.

NOTE: Section 18.1 is for the current population (as of 1st October 2003);
Section 18.2 and 18.3 is for movement in and out of the herd
during the 2002/03 agriculture year.
Section 18.4 is for diseases encountered during the agriculture year.

1. If the household has cows, you would normally expect them to have calves in column 8

2. If calves are reported in column 2, 3, or 4 (18.2.6, 18.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of cattle the importance of this must be reflected in Q 2.2.3

Section 18.5 If cattle are reported to have died in Column 5 then at least that number should be reported in 18.4 col 4

Working area for page 13

19.0 GOAT POPULATION, INTAKE AND OFFTAKE															
19.1 Did the household own, raise or manage any GOATS during the 2002/03 agriculture year? (Yes =1 No =2) <input type="checkbox"/>															
19.2 Goat Population as of 1st October 2003					19.3 Goat Intake during 2002/2003										
S/N	Goat type	Number of Indigenous	Number of Improved		Total	S/N	Number Purchased	Number given /obtained	Number Born	Total Intake of Goats	Average Value per head				
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)				
19.2.1	Billy Goat	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.3.1	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
19.2.2	Castrated Goat	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.3.2	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
19.2.3	She Goat	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.3.3	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
19.2.4	Male Kid	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.3.4	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>				
19.2.5	She Kid	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.3.5	<input type="text"/>	<input type="text"/>		<input type="text"/>	<input type="text"/>				
Grand Total					<input type="text"/>	Total Intake					<input type="text"/>				
19.4 Goat Offtake during 2002/2003								19.5 Goat diseases							
S/N	Goat type	Number Sold/traded	Number consumed by hh	Number given away/stolen	Number died	Total Goat Offtake	Average value per head	S/N	Disease/parasite	Number Infected	Number Treated	No. Rec-overed	Number Died	Last vacci-nated	Main Sou-rce
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		(1)	(2)	(3)	(4)	(5)	(6)	(7)
19.4.1	Male goat	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>								
19.4.2	Castrated Goat	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.5.1	Foot Rot	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
19.4.3	She Goat	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.5.2	CC PP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
19.4.4	Male Kid	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.5.3	Helminthiosis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
19.4.5	She Kid	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	19.5.4	Tetanus	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
Total Offtake						<input type="text"/>		19.5.5	Mange	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
19.6 Milk Production							Sold to Q19.6 Col 5) Neighbour.....1 Largescale farm ..5 Local Market.....2 Trader at Farm ...6 Secondary Market ...3 Did not sell7 Processing industry .4 Other8				Last Vaccinated (Col 6) 20031 20004 20022 before 20005 20013 Not Vaccinated...6				
S/N	Season	Litres of milk/day	No. of Goats milked/day	Value/litre	Sold to	Sold/day (Litres)									
	(1)	(2)	(3)	(4)	(5)	(6)									
19.6.1	Wet Season	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>									
19.6.2	Dry Season	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>									
							Main Source of vaccine (Col 7) Private Vet Clinic ..1 Other8 District Vet Clinic ..2 Not Vaccinable9 NGO/Project.....3								

Definitions and working page for page 14**Goat definitions for page 14**

Goat Intake during 2002/03: Goat purchased, given or born which increases the number of goats in the herd.

Goat Offtake during 2002/03:

Goat removed from the herd, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 19.0)**Goat type (Q 19.2 & 19.4, Col 1)**

Billy Goat (he-goat): Mature **Uncastrated** male goat used for breeding

Castrated goat: Male goat that has been castrated.

She Goat: Mature female goat over 9 months of age

Kid: Young goat under 9 months of age.

Average Value per Head (Q 19.3, (Col 7 & 9) & 19.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Goat vaccination (19.5 col 1)

FMD: Foot and Mouth Disease

CCPP: Contagious Caprine Pleura Pneumonia

LSD: Lumpy Skin Disease

Section 19.0 Goat Population, Intake & Offtake.

NOTE: Section 19.1 is for the current population (as of 1st October 2003); Section 19.2 and 18.3 is for movement in and out of the herd during the 2002/03 agriculture year. Section 19.4 is for diseases encountered during the agriculture year.

1. If the household has she goats, you would normally expect them to have kids in column 8
2. If kids are reported in column 2, 3, or 4 (19.2.6, 19.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of goats the importance of this must be reflected in Q 2.2.3

Section 19.5 If goats are reported to have died in Column 5 then at least that number should be reported in 19.4 col 4

Working area for page 14

20.0 SHEEP POPULATION, INTAKE AND OFFTAKE															
20.1 Did the household own, raise or manage any SHEEP during the 2002/03 agriculture year? (Yes =1 No =2) <input type="checkbox"/>															
(If no go to section 21.0)															
20.2 Sheep Population as of 1st October 2003						20.3 Sheep Intake during 2002/2003									
S/N	Sheep type	Number of Indigenous	Number of Improved			Total	S/N	Number Purchased	Number given /obtained	Number Born	Total Intake of Sheep	Average Value per head			
			for Mutton	Dairy								(5)	(6)	(7)	(8)
	(1)	(2)	(3)	(4)			(6)	(7)	(8)	(9)					
20.2.1	Ram	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	20.3.1	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
20.2.2	Castrated Sheep	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	20.3.2	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
20.2.3	She Sheep	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	20.3.3	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	<input type="text"/>				
20.2.4	Male lamb	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	20.3.4	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
20.2.5	She lamb	<input type="text"/>	<input type="text"/>	X X X	<input type="text"/>	20.3.5	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
Grand Total					<input type="text"/>	<input type="text"/>									
20.4 Sheep Offtake during 2002/2003							20.5 Sheep diseases								
S/N	Sheep type	Number Sold/traded	Number consumed by hh	Number given away/stolen	Number died	Total Sheep Offtake	Average value per head	S/N	Disease/parasite	Number Infected	Number Treated	No. Rec-overed	Number Died	Last vaccinated	Main Source
20.4.1	Ram	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		(1)	(2)	(3)	(4)	(5)	(6)	(7)
20.4.2	Castrated Sheep	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	20.5.1	Foot Rot	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
20.4.3	She Sheep	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	20.5.2	CC PP	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
20.4.4	Male lamb	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	20.5.3	Helminthiosis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	X
20.4.5	She lamb	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	20.5.4	Trypanosomiasis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Total Offtake						<input type="text"/>	<input type="text"/>								
										<p>Last Vaccinated (Col 6)</p> <p>20031 20004</p> <p>20022 before 20005</p> <p>20013 Not Vaccinated...6</p>					
										<p>Main Source of vaccine (Col 7)</p> <p>Private Vet Clinic ..1 Other8</p> <p>District Vet Clinic ..2 Not applicable9</p> <p>NGO/Project.....3</p>					

Definitions and working page for page 15**Sheep definitions for page 15**

Sheep Intake during 2002/03: Sheep purchased, given or born which increases the number of Sheep in the herd.

Sheep Offtake during 2002/03:
Sheep removed from the herd, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 20.0)**Sheep type (Q 20.2 & 20.4, Col 1)**

Ram: Mature **Uncastrated** male goat used for breeding

Castrated sheep: Male sheep that has been castrated.

Ewe: Mature female sheep over 9 months of age

Lamb: Young sheep under 9 months of age.

Average Value per Head (Q 20.3, (Col 7 & 9) & 20.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Sheep vaccination (20.5 col 1)

FMD: Foot and Mouth Disease

CCPP: Contagious Caprine Pleura Pneumonia

Section 20.0 Sheep Population, Intake & Offtake.

NOTE: Section 20.1 is for the current population (as of 1st October 2003);
Section 20.2 and 20.3 is for movement in and out of the herd during the 2002/03 agriculture year.
Section 20.4 is for diseases encountered during the agriculture year.

1. If the household has ewes, you would normally expect them to have kids in column 8
2. If lambs are reported in column 2, 3, or 4 (20.2.6, 20.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of Sheep the importance of this must be reflected in Q 2.2.3

Section 20.5 If Sheep are reported to have died in Column 5 then at least that number should be reported in 20.4 col 4

Working area for page 15

|

21.0 PIG POPULATION AND PRODUCTION															
21.1		Did the household own, raise or manage any PIGS during the 2002/03 agriculture year (Yes =1 No =2) <input type="checkbox"/>													
21.2		PIG Population as of 1 st October 2003											21.3 Pig increase during 2002/2003		
S/N	Pig type	Number													
	(1)	(2)													
21.2.1	Boar	<input type="text"/>													
21.2.2	Castrated male	<input type="text"/>													
21.2.3	Sow/Gilt	<input type="text"/>													
21.2.4	Male piglet	<input type="text"/>													
21.2.5	She piglet	<input type="text"/>													
Grand Total		<input type="text"/>													
21.4 Pig decrease during 2002/2003								21.5 Pig diseases/pests/conditions							
S/N	Pig type	Number Sold/traded	Number consumed by hh	Number given away/stolen	Number died	Total Pig Offtake	Average value per head	S/N	Disease/ parasite	Number Infected	Number Treated	No. Rec- overed	Number Died	Last vacci- nated	Main Sou- rce
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		(1)	(2)	(3)	(4)	(5)	(6)	(7)
21.4.1	Boar	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>			<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
21.4.2	Castrated male	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	21.5.1	Anthrax	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
21.4.3	Sow/Gilt	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	21.5.2	ASF	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
21.4.4	Male piglet	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	21.5.3	Anemia	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21.4.5	She piglet	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	21.5.4	Helmenthiosis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Total Offtake						<input type="text"/>									
22.0 LIVESTOCK PEST & PARASITE CONTROL								22.3 Do you normally encounter a tick problem (Yes=1, No=2) <input type="checkbox"/>				Last Vaccinated (Col 6) 2003 ..1 20004 2002 ..2 before 20005 2001 ...3 Not Vaccinated.6			
								(If the response is 'NO' go to section 22.5)							
22.1 Did you deworm your animals during 2002/03 (Yes=1, No=2) <input type="checkbox"/>								22.4 Which methods of tick control did you use <input type="checkbox"/>				Main Source (Col 7) Private Vet Clinic ..1 District Vet Clinic ..2 NGO/Project3 Other8 Not applicable9			
								Control method (Q 22.4) None..1 Spraying ..2 Dipping..3 Smearing ..4 Other.8							
								22.5 Do you normally encounter a tsetse fly problem (Y=1, N=2) <input type="checkbox"/>							
								(If the response is 'NO' go to section 23.0)							
22.2 Which animals did you deworm ? (Tick appropriate boxes)								22.6 Which methods of control did you use <input type="checkbox"/>							
Cattle <input type="checkbox"/> Goats <input type="checkbox"/> Sheep <input type="checkbox"/> Pigs <input type="checkbox"/>								Control method (Q22.6) None .1 Spray .2 Dipping .3 Trapping .4 Other .8							

Definitions and working page for page 16**Pigs definitions for page 16**

Pig Intake during 2002/03: Pigs purchased, given or born which increases the number of Pigs in the production unit.

Pig Offtake during 2002/03:

Pigs removed from the production unit, either by selling, hh consumption, given away or stolen.

Question Specific Definitions (Section 21.0)**Pigs type (Q 21.2 & 21.4, Col 1)**

Boar: Mature **Uncastrated** male pig used for breeding

Castrated Pig: Male pig that has been castrated.

Sow: Mature female pig that has given birth to at least one litter of pigs.

Gilt: Female pig of 9 months up to the first farrowing.

Piglet: Young pig under 3 months of age.

Average Value per Head (Q 21.3, (Col 7 & 9) & 21.4 (Col 3, 5 & 7))

In these columns give the average value per head during 2002/03. For given, traded, consumed by the hh & given away/stolen estimate the value.

Pig vaccination (21.5 col 1)

ASF: African Swine Fever

Section 21.0 Pig Population, Intake & Offtake.

NOTE: Section 21.1 is for the current population (as of 1st October 2003); Section 21.2 and 21.3 is for movement in and out of the herd during the 2002/03 agriculture year. Section 21.4 is for diseases encountered during the agriculture year.

1. If the household has sows, you would normally expect them to have piglets in column 8
2. If piglets are reported in column 2, 3, or 4 (20.2.6, 20.2.5) then there must be at least that number repeated in column 8

Note: If the farmer reports sales of Pigs the importance of this must be reflected in Q 2.2.3

Section 20.5 If Pigs are reported to have died in Column 5 then at least that number should be reported in 20.4 col 4

Working area for page 16

|

23.0 Other Livestock currently available and details of consumption and sales during the last 12 months											
	Animal type	Current		Sold during 2002/03		Consumed during 2002/03					
		Number		Number	Average Value/head	Number	Average Value/head				
		(1)		(2)	(3)	(4)	(5)				
23.1	Indigenous Chicken	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.2	Layer	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.3	Broiler	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.4	Ducks	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.5	Turkeys	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.6	Rabbits	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.7	Donkeys	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
23.8	Horses	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X X X	X X X X X				
23.9	Other	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>				
24.0	CHICKEN DISEASES	Number infected		Number Treated		Number Died		Number Recovered			
24.1	Newcastle Disease	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
24.2	Gumboro	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
24.3	Coccidiosis	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
24.4	Chorysa	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
24.5	Fowl typhoid	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
25.0	LIVESTOCK PRODUCT	Sold during 2002/03				Consumed/utilised during 2002/03					
		Number			Average Value/unit		Number		Average Value/unit		
25.1	Eggs	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	X	<input type="text"/>	<input type="text"/>	<input type="text"/>		
25.2	Hides	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
25.3	Skins	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
26.0	List in order of importance the outlets for the sale of Livestock						27.0 Access to functional Livestock structures /accessories				
S/N	Impo-rtance of outlet	Outlets for Cattle	Out-lets for Goat	Outlets for Sheep	Outl-ets for Pigs	Outlets for Chick-ens	S/N	Type of structure/ accessory	Source of Structure	Distance to struct-ure (Km)	
	(1)	(2)	(3)	(4)	(5)	(6)		(1)	(2)	(3)	
26.1	1st	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	27.1	Cattle Dip	<input type="text"/>	<input type="text"/>	
26.2	2nd	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	27.2	Spray Race	<input type="text"/>	<input type="text"/>	
26.3	3rd	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	27.3	Hand powered sprayer	<input type="text"/>	<input type="text"/>	
26.4	4th	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	27.4	Cattle crush	<input type="text"/>	<input type="text"/>	
26.5	5th	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	27.5	Primary Market	<input type="text"/>	<input type="text"/>	
	Outlet code (Col 2, 3, 4 & 5)							27.6	Secondary Market	<input type="text"/>	<input type="text"/>
	Trader at farm1 Abattoir/factory.....5							27.7	Abattoir	<input type="text"/>	<input type="text"/>
	Local Market2 Another farmer6							27.8	Slaughter Slab	<input type="text"/>	<input type="text"/>
	Secondary market/auction.....3 Other (Specify).....8							27.9	Hide/skin shed	<input type="text"/>	<input type="text"/>
	Neighbour4							27.10	Input supply	<input type="text"/>	<input type="text"/>
	Source of structure (Q27.0 - Col 2)							27.11	Veterinary Clinic	<input type="text"/>	<input type="text"/>
	Owns1 NGO6							27.12	Village holding ground	<input type="text"/>	<input type="text"/>
	Cooperative2 Large scale farm7							27.13	village watering point/dam	<input type="text"/>	<input type="text"/>
	Local farmers association3 Other8							27.14	Drencher	<input type="text"/>	<input type="text"/>
	Gov extension/veterinary4 Not applicable9										
	Development project5										

Definition and working page for page 17
Question Specific Definitions Section 26.0)
Question Specific Definitions Section 27.0)
Access to functional Livestock Structures/accessories (Section 27.0):

NOTE: The structures must be functional. If they are not working/derelect then they should not be included. The distance to the next nearest functional structure should be taken.

Spray Race: A fixed spray structure on an animal race for spraying acaricide

Cattle crush: Corridor structure for restraining cattle.

Abattoir: Large building designed for slaughtering a large amount of animals. It normally has complex structures to assist in the slaughter and storage and a high level of hygiene is maintained.

Slaughter Slab: Concrete slab designed for slaughtering a small amount of animals

Hides: obtained from Cattle

Skins: Obtained from sheep and goats

Hide/Skin Shed: Shed for curing/tanning animal skins and hides

Village holding Pen: Enclosure for containing large amount of livestock which is owned communally.

Drencher: Device for orally administering medicine to livestock. If no product was sold in 2002 enter "0" in columns 6, 7 & 9.

Procedures for questions
Section 23.0 - Other Livestock:

1. The current number includes both adult and young animals. For example The number of chickens in col 1 would include adults and chicks.

Section 26.0 - Outlets for livestock:

Using the codes enter the outlets for the sale of different livestock in order of importance. If there are, for example, only 2 outlets mark the rest with a "X".

28.0 FISH FARMING

28.1 Was **Fish farming** carried out by this household during 2002/2003? (Yes =1, No=2) (If the response is 'NO' go to section 29.0)

28.2 Specify details of **fish farming practices**

S/N	Product ion unit number	Fish farming system	Size of unit/pond (m2)	Source of fingerling	frequency of stocking (No/year)	Number of stocked fish			Number of fish harvested	weight of fish harvested	weight of fish sold	Mainly sold to
						Tilapia	Carp	Other				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
28.1.1	1	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
28.1.2	2	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
28.1.3	3	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Farming System (Col 2)
 Natural Pond...1 Natural Lake...3 Other...8
 Dug out pond...2 Water reservoir...4

Source of fingerlings (Col 4)
 Own pond...1 NGO/Project...3 Private trader...5
 Government Institution...2 Neighbour...4 Other...8

Mainly sold to (Col 12)
 Neighbour...1 Secondary Market...3 Large scale farm...5 Did not sell...7
 Local Market...2 Processing industry...4 Trader at Farm...6 Other...8

29.0 LIVESTOCK EXTENSION

29.1 Did you receive **livestock extension advice** during 02/03 (Yes=1, No=2) (If the response is 'NO' go to section 30.0)

S/N	Livestock Extension Message	Received Advice Yes=1, No=2	Adopted Yes=1 No=2	Source of Livestock Extension
	(1)	(2)	(3)	(4)
29.1.1	Feed and Proper feeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.2	Housing (Goat, Dairy, Poultry, Pigs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.3	Proper Milking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.4	Milk Hygiene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.5	Disease control (dipping/spraying)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.6	Herd/Flock size and selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.7	Pasture Establishment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.8	Group formation and strengthening	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.9	Calf rearing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.10	Use of improved bulls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29.1.11	Other livestock extension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Source of livestock extension (Col 4)
 Government...1 NGO/Dev project...2 Cooperative...3 Large scale farmer...4 Other (Specify)...8

29.2 For the following **Livestock Extension Service Providers** give details

S/N	Extension Provider	If you pay for extension, what is the cost/yr	Contact farmer/group member (Y=1, N=2)	No. of visits by extension agency/year	No. of messages adopted in the last 3 yrs	Quality of Service
	(1)	(2)	(3)	(4)	(5)	(6)
29.2.1	Government	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
29.2.2	NGO/dev project	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
29.2.3	Cooperative	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
29.2.4	Large Scale farmer	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>
29.2.5	Other.....	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>

Quality of service (Col 6) Very good...1 good...2 Average...3 Poor...4 No Good...5

30.0 GOVERNMENT REGULATORY PROBLEMS

31.1 Did you face problems with government regulations during 2002/03 (Y=1, N=2) (If the response is no go to section 31.0)

List in order of importance

	Problem code	Problem code
30.1.1	1st	Land ownership by government...1 Restriction of sale between regions...2
30.1.2	2nd	Import of food items...3
30.1.3	3rd	Other (specify)...8

Definitions and working page for page 18**General definitions for Section 28.0**

Fish farming: Refers to the rearing/production of fish. It is different to fishing in that the fish have to be reared and fed in fish farming. Fishing traps or captures naturally occurring fish in rivers, lakes and the sea and should not be included in this section.

Question Specific Definitions (Section 28.2)

Production unit number (Col 1): A production unit is a pond river/lake which is treated as a separate entity for the production of fish eg it may be by virtue of manageable size, maturity of fish, type of fish etc. Eg a farmer may have 3 fish ponds. (each one is a separate production unit).

Frequency of stocking (Col 5): What is the number of times the farmer puts new fingerlings into the pond each year.

Fingerlings: These are young immature fish used for stocking ponds.

Sold: (Col 10 & 11)

If no fish were sold enter "0" in column 10 and 11)

Livestock Extension Services (Section 29.1)

Adopted (Col 3): This is the uptake of an intervention for 2 or more years

Livestock Extension Service providers (Section 29.2)

Contact Farmer: A farmer who is used by the extension services as a focal point to demonstrate new interventions to. The contact farmer then passes on the message to other farmers

Adopted (Col 5): This is the uptake of an intervention for 2 or more years

Working area for page 18

31.0 LABOUR USE				32.0 SUBSISTENCE vs NON-SUBSISTENCE																																																				
31.1 Who is mainly responsible for undertaking the following tasks:				32.1 Indicate if any members of the household was involved in the following activities and assess the percentage used for subsistence/consumption by the household:																																																				
S/N	Activity	Tick if carried out by hh	Main responsibility	S/N	Activity	Tick if hh was involved in activity	Estimate % used for subsistence	Estimate % used for no subsistence	Check Total																																															
	(1)	(2)	(3)		(1)	(2)	(3)	(4)	(5)																																															
31.1.1	Land Clearing	<input type="checkbox"/>	<input type="checkbox"/>	32.1.1	Crop production	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.2	Soil preparation (by hand)	<input type="checkbox"/>	<input type="checkbox"/>	32.1.2	Livestock production	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.3	Soil preparation (oxen/tractor)	<input type="checkbox"/>	<input type="checkbox"/>	32.1.3	Vegetable production	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.4	Planting	<input type="checkbox"/>	<input type="checkbox"/>	32.1.4	Tree cutting for firewood	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.5	Weeding	<input type="checkbox"/>	<input type="checkbox"/>	32.1.5	Tree logging for poles	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.6	Crop Protection	<input type="checkbox"/>	<input type="checkbox"/>	32.1.6	Tree logging for timber	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.7	Harvesting	<input type="checkbox"/>	<input type="checkbox"/>	32.1.7	Tree logging for charcoal	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.8	Crop processing	<input type="checkbox"/>	<input type="checkbox"/>	32.1.8	fishing	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.9	Crop marketing	<input type="checkbox"/>	<input type="checkbox"/>	32.1.9	bee keeping	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.10	Cattle rearing/husbandry	<input type="checkbox"/>	<input type="checkbox"/>	32.1.10	employment/off farm	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.11	Cattle herding	<input type="checkbox"/>	<input type="checkbox"/>	32.1.11	employment/off farm	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.12	Cattle marketing	<input type="checkbox"/>	<input type="checkbox"/>	32.1.12	Remittances	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>																																															
31.1.13	Goat/sheep rearing/husbandry	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.14	Goat and sheep herding	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.15	Goat and sheep marketing	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.16	Milking	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.17	Pig rearing/husbandry	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.18	Poultry keeping	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.19	Collecting Water	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.20	Collecting Firewood	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.21	Pole cutting	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.22	Timber wood cutting	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.23	Building/maintaining house	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.24	Making Beer	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.25	Bee keeping	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.26	Fishing	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.27	Fish farming	<input type="checkbox"/>	<input type="checkbox"/>																																																					
31.1.28	Off-farm income generation	<input type="checkbox"/>	<input type="checkbox"/>																																																					
Responsibility (Col 3) HH head alone1 Girls6 Adult Males2 Boys & Girls7 Adult Females.....3 All household members.....8 Adults.....4 Hired labour9 boys5				33.0 ACCESS TO INFRASTRUCTURE & OTHER SERVICES																																																				
				<table border="1"> <thead> <tr> <th>S/N</th> <th>Type of service</th> <th>Distance in Km</th> <th>S/N</th> <th>Type of service</th> <th>Distance in Km</th> </tr> <tr> <td></td> <td>(1)</td> <td>(2)</td> <td></td> <td>(1)</td> <td>(2)</td> </tr> </thead> <tbody> <tr> <td>33.1</td> <td>Primary School</td> <td><input type="text"/></td> <td>32.7</td> <td>Feeder Road</td> <td><input type="text"/></td> </tr> <tr> <td>33.2</td> <td>Secondary School</td> <td><input type="text"/></td> <td>32.8</td> <td>All weather road</td> <td><input type="text"/></td> </tr> <tr> <td>33.3</td> <td>Health Clinic</td> <td><input type="text"/></td> <td>32.9</td> <td>Tarmac road</td> <td><input type="text"/></td> </tr> <tr> <td>33.4</td> <td>Hospital</td> <td><input type="text"/></td> <td>32.10</td> <td>Primary market</td> <td><input type="text"/></td> </tr> <tr> <td>33.5</td> <td>District Capital</td> <td><input type="text"/></td> <td>32.11</td> <td>Secondary market</td> <td><input type="text"/></td> </tr> <tr> <td>33.6</td> <td>Regional Capital</td> <td><input type="text"/></td> <td>32.12</td> <td>Tertiary market</td> <td><input type="text"/></td> </tr> </tbody> </table>					S/N	Type of service	Distance in Km	S/N	Type of service	Distance in Km		(1)	(2)		(1)	(2)	33.1	Primary School	<input type="text"/>	32.7	Feeder Road	<input type="text"/>	33.2	Secondary School	<input type="text"/>	32.8	All weather road	<input type="text"/>	33.3	Health Clinic	<input type="text"/>	32.9	Tarmac road	<input type="text"/>	33.4	Hospital	<input type="text"/>	32.10	Primary market	<input type="text"/>	33.5	District Capital	<input type="text"/>	32.11	Secondary market	<input type="text"/>	33.6	Regional Capital	<input type="text"/>	32.12	Tertiary market	<input type="text"/>
S/N	Type of service	Distance in Km	S/N	Type of service	Distance in Km																																																			
	(1)	(2)		(1)	(2)																																																			
33.1	Primary School	<input type="text"/>	32.7	Feeder Road	<input type="text"/>																																																			
33.2	Secondary School	<input type="text"/>	32.8	All weather road	<input type="text"/>																																																			
33.3	Health Clinic	<input type="text"/>	32.9	Tarmac road	<input type="text"/>																																																			
33.4	Hospital	<input type="text"/>	32.10	Primary market	<input type="text"/>																																																			
33.5	District Capital	<input type="text"/>	32.11	Secondary market	<input type="text"/>																																																			
33.6	Regional Capital	<input type="text"/>	32.12	Tertiary market	<input type="text"/>																																																			
				<table border="1"> <thead> <tr> <th>S/N</th> <th>Type of service</th> <th>Distance in Km</th> <th>No of visits/year</th> <th>Satisfied with service</th> </tr> <tr> <td></td> <td>(1)</td> <td>(2)</td> <td>(3)</td> <td>(4)</td> </tr> </thead> <tbody> <tr> <td>33.13</td> <td>Vet Clinic</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>33.14</td> <td>Extension Centre</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>33.15</td> <td>Research Station</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>33.16</td> <td>Plant protection Lab</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>33.17</td> <td>Land registration office</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>33.18</td> <td>Livestock Dev Centre</td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </tbody> </table>					S/N	Type of service	Distance in Km	No of visits/year	Satisfied with service		(1)	(2)	(3)	(4)	33.13	Vet Clinic	<input type="text"/>	<input type="text"/>	<input type="text"/>	33.14	Extension Centre	<input type="text"/>	<input type="text"/>	<input type="text"/>	33.15	Research Station	<input type="text"/>	<input type="text"/>	<input type="text"/>	33.16	Plant protection Lab	<input type="text"/>	<input type="text"/>	<input type="text"/>	33.17	Land registration office	<input type="text"/>	<input type="text"/>	<input type="text"/>	33.18	Livestock Dev Centre	<input type="text"/>	<input type="text"/>	<input type="text"/>								
S/N	Type of service	Distance in Km	No of visits/year	Satisfied with service																																																				
	(1)	(2)	(3)	(4)																																																				
33.13	Vet Clinic	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																				
33.14	Extension Centre	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																				
33.15	Research Station	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																				
33.16	Plant protection Lab	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																				
33.17	Land registration office	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																				
33.18	Livestock Dev Centre	<input type="text"/>	<input type="text"/>	<input type="text"/>																																																				
Satisfied with service (Col 4) Very good1 Average.....3 No good5 Good2 Poor4 Not applicable 9																																																								

Definition and working page for page 19**Question specific definitions (Section 31.1)****Activity (Col 1):**

Land Clearing: Refers to removing trees/bush/grass prior to ploughing

Soil Preparation: Refers to the seedbed preparation (ploughing, harrowing, etc).

Cattle Rearing: Tending to cattle at home, eg assisting with births, castration, etc. Different livestock keeping activity to herding.

Cattle Herding: Moving livestock from place to place for grazing and water. If herding is carried out the respondent must also give a response to rearing/husbandry

Question Specific Definitions (Section 32.0.0)**Activity (Col 1):**

Subsistence: For the family's survival, rather than for the generation of cash. This includes feeding the hh, provision of water and fuel for cooking. The source of these products are usually from the land resources available to the family. Remember that not all cash earnings are for non subsistence purposes/activities as cash can be used to purchase subsistence items eg food.

Non -subsistence: Cash used for items and activities which are not crucial for the survival of the family. This includes modern medication, non working clothes, refined beer, school fees, etc.

Procedures for (Section 31.1)**Section 31.1 ((Labour use)**

1. For each listed activity in column 1, place a tick in column 2 if any member of the household was involved in that activity during the 2002/03 agriculture year.
2. After completing column 2 return to the first activity in row 27.1.1 and complete column 3.
3. Make sure you stress MAINLY responsible.

NOTE: If an activity has been mentioned previously in the questionnaire eg that the hh keeps chickens, make sure a response is obtained in the appropriate place ie poultry keeping.

If off-farm income generation is mentioned, check for responses to off farm income in other parts of the questionnaire

Section 32.0 - Subsistence vs Non-subsistence

1. For each listed activity in column 1, place a tick in column 2 if any member of the household was involved in that activity during the 2002/03 agriculture year.
2. After completing column 2 return to the first activity in row 32.1.1 and complete column 3 & 4. For each activity make an assessment of the percentage used for subsistence survival and the percent converted to cash for non subsistence goods and items.
3. Make sure you stress MAINLY responsible.

NOTE: Cross check the responses with previous sections in the questionnaire. eg if a response is given to remittances check for an entry in question 2.2.5

34.0 HOUSEHOLD FACILITIES																							
34.1	House Construction	34.2 Household assets																					
<p>For the main dwelling, what are the main building materials used in the construction of the following</p> <p>34.1.1: Roof <input type="checkbox"/> 34.1.2 Number of rooms <input type="checkbox"/> <input type="checkbox"/></p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Roof Material</p> <p>Iron Sheets.....1 Tiles2 Concrete3 Asbestos4 Grass/leaves.....5 Grass & mud.....6 Other (Specify) 8</p> </div>		<p>Does your household own the following?</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">Asset</th> <th style="width: 20%;">Y=1 N=2</th> </tr> </thead> <tbody> <tr><td>34.2. Radio/cassette, music system)</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Telephone (landline)</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Telephone (mobile)</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Iron</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Wheelbarrow</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Bicycle</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Vehicle</td><td><input type="checkbox"/></td></tr> <tr><td>34.2. Television</td><td><input type="checkbox"/></td></tr> </tbody> </table>		Asset	Y=1 N=2	34.2. Radio/cassette, music system)	<input type="checkbox"/>	34.2. Telephone (landline)	<input type="checkbox"/>	34.2. Telephone (mobile)	<input type="checkbox"/>	34.2. Iron	<input type="checkbox"/>	34.2. Wheelbarrow	<input type="checkbox"/>	34.2. Bicycle	<input type="checkbox"/>	34.2. Vehicle	<input type="checkbox"/>	34.2. Television	<input type="checkbox"/>		
Asset	Y=1 N=2																						
34.2. Radio/cassette, music system)	<input type="checkbox"/>																						
34.2. Telephone (landline)	<input type="checkbox"/>																						
34.2. Telephone (mobile)	<input type="checkbox"/>																						
34.2. Iron	<input type="checkbox"/>																						
34.2. Wheelbarrow	<input type="checkbox"/>																						
34.2. Bicycle	<input type="checkbox"/>																						
34.2. Vehicle	<input type="checkbox"/>																						
34.2. Television	<input type="checkbox"/>																						
34.3	Energy use by the Household	34.4 Access to drinking water																					
<p>Energy use and access by the household</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Main Source of energy for</th> </tr> </thead> <tbody> <tr> <td style="width: 50%;">34.3.1 Lighting <input type="checkbox"/> <input type="checkbox"/></td> <td style="width: 50%;">34.3.2 Cooking <input type="checkbox"/> <input type="checkbox"/></td> </tr> </tbody> </table> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="border: 1px solid black; padding: 5px; width: 48%;"> <p>Lighting energy</p> <p>Mains electricity.....01 Solar02 Gas (biogas)03 Hurricane Lamp04 Pressure Lamp05 Wick Lamp06 Candles07 Firewood08 Other (specify) 98</p> </div> <div style="border: 1px solid black; padding: 5px; width: 48%;"> <p>Cooking energy</p> <p>Mains electricity.....01 Solar02 Gas (hh biogas)03 Bottled gas04 Paraffin/kerocine.....05 Charcoal.....06 Firewood07 Crop Residues08 Livestock dung09 Other (specify)98</p> </div> </div>		Main Source of energy for		34.3.1 Lighting <input type="checkbox"/> <input type="checkbox"/>	34.3.2 Cooking <input type="checkbox"/> <input type="checkbox"/>	<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Season</th> <th style="width: 20%;">Main source of drinking water</th> <th style="width: 20%;">Distance to source (in km)</th> <th style="width: 45%;">Time to and from source (Hour : minute)</th> </tr> <tr> <th style="text-align: center;">(1)</th> <th style="text-align: center;">(2)</th> <th style="text-align: center;">(3)</th> <th style="text-align: center;">(4)</th> </tr> </thead> <tbody> <tr> <td>34.4. Wet Season</td> <td><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/></td> <td><input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/></td> </tr> <tr> <td>34.4. Dry Season</td> <td><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/></td> <td><input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/></td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Main Source of drinking water</p> <p>Piped water01 Covered rainwater catchment ...07 Protected well02 Uncovered rainwater catchment 08 Protected/covered spring03 Water Vendor09 Unprotected Well04 Tanker truck10 Unprotected spring05 Bottled water11 Surface water (lake/dam/river/stream)06 Other (Specify)98</p> </div>		Season	Main source of drinking water	Distance to source (in km)	Time to and from source (Hour : minute)	(1)	(2)	(3)	(4)	34.4. Wet Season	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>	34.4. Dry Season	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>
Main Source of energy for																							
34.3.1 Lighting <input type="checkbox"/> <input type="checkbox"/>	34.3.2 Cooking <input type="checkbox"/> <input type="checkbox"/>																						
Season	Main source of drinking water	Distance to source (in km)	Time to and from source (Hour : minute)																				
(1)	(2)	(3)	(4)																				
34.4. Wet Season	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>																				
34.4. Dry Season	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> . <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> : <input type="checkbox"/> <input type="checkbox"/>																				
34.5	Access to toilet facilities	34.6 Food consumption patterns																					
<p>34.5.1 What type of toilet does your hh use <input type="checkbox"/></p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Type of toilet</p> <p>No toilet/bush.....1 Improved pit latrine - hh owned.....4 Flush toilet2 Other type (specify)5 Pit latrine - traditional ..3</p> </div>		<table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 80%;">34.6. Number of meals the hh normally has per day</td> <td style="width: 20%;"><input type="checkbox"/></td> </tr> <tr> <td>34.6. Number of days hh consumed meat last w</td> <td><input type="checkbox"/></td> </tr> <tr> <td>34.6. How often did the hh have problems in satisfying the food needs of the hh last year?</td> <td><input type="checkbox"/></td> </tr> </tbody> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Problems satisfying hh food needs (row 34.6.3)</p> <p>Never1 Seldom2 Sometimes3 Often4 Always5</p> </div>		34.6. Number of meals the hh normally has per day	<input type="checkbox"/>	34.6. Number of days hh consumed meat last w	<input type="checkbox"/>	34.6. How often did the hh have problems in satisfying the food needs of the hh last year?	<input type="checkbox"/>														
34.6. Number of meals the hh normally has per day	<input type="checkbox"/>																						
34.6. Number of days hh consumed meat last w	<input type="checkbox"/>																						
34.6. How often did the hh have problems in satisfying the food needs of the hh last year?	<input type="checkbox"/>																						
34.7	Source of Household income																						
<p>34.7.1 What is the households main source of cash income? <input type="checkbox"/> <input type="checkbox"/></p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>Source of Income codes</p> <p>Sale of food crops01 Wages or salaries in cash07 Sale of Livestock.....02 Other casual cash earnings ..08 Sale of livestock products ...03 Cash remittances09 Sale of cash crops.....04 Fishing10 Sale of forest products05 Other98 Business income.....06 Not applicable99</p> </div>																							

Definition and working page for page 20**Household facilities (Section 34):****Number of rooms used for sleeping in the household (Q 34.1)**

Include sitting room, dining room, kitchen, etc if used for sleeping. It also includes rooms outside the main dwelling

A room is defined as a space which is separate from the rest of the building by a permanent wall or division. A building/house that is not divided into rooms is considered to have one room.

Household assets (Q 34.2): these assets must be functioning. Do not include if broken.

Access to drinking water (Q 34.4): If there is more than one source, use the one, which the hh uses most frequently.

Main source of hh cash income:

Activity that provides the hh with the most cash during 2002/03 agriculture year.

Average/maximum yields						Use this table to compare the yields calculated in sections 7.1, 7.2, and 7.3. They are STRICTLY to be used as guidelines only and the sole purpose is to assist in getting the correct area and harvest for each crop					
Crop Name	kg/ha		kg/acre		Crop Name	kg/ha		kg/acre			
	Average	Max	Average	Max		Average	Max	Average	Max		
11 Maize	1200	6250	486	2530	86 Cabbage			0	0		
12 Paddy	700	4000	283	1619	87 Tomatoes			0	0		
13 Sorghum	750	3500	304	1417	88 Spinach			0	0		
14 Bulrush Millet	350	3000	142	1215	89 Carrot			0	0		
15 Finger Millet	300	2500	121	1012	90 Chillies			0	0		
16 Wheat	1200	4500	486	1822	91 Amaranths			0	0		
17 Barley	1400	2300	567	931	92 Pumpkins			0	0		
21 Cassava	3000	7000	1215	2834	93 Cucumber			0	0		
22 Sweet Potato	600	8000	243	3239	94 Egg Plant			0	0		
23 Irish potatoes	750	8500	304	3441	95 Water Mellon			0	0		
24 Yams	4000	10000	1619	4049	96 Cauliflower			0	0		
25 Cocoyams	2500	5000	1012	2024	52 Sisal	800	25000	324	10121		
26 Onions			0	0	54 Coffee	500	100	202	40		
27 Ginger			0	0	55 Tea	2500	10000	1012	4049		
31 Beans	400	1300	162	526	56 Cacao	200	1000	81	405		
32 Cowpeas	300	1750	121	709	57 Rubber	400	1400	162	567		
33 Green gram			0	0	58 Wattle			0	0		
34 Pigeon pea	600	2000	243	810	59 Kapok			0	0		
35 Chick peas	500	1500	202	607	60 Sugar Cane	60000	150000	24291	60729		
36 Bambara nut	600	4000	243	1619	61 Cardamom			0	0		
41 Sunflower	600	1700	243	688	71 Banana	10000	50000	4049	20243		
42 Simsim	300	1000	121	405	72 Avocado			0	0		
43 Groundnut	600	4000	243	1619	73 Mangoes	10000	25000	4049	10121		
47 Soyabeans	1300	2500	526	1012	74 Papaw	50000	70000	20243	28340		
48 Caster seed	300	750	121	304	76 Orange	20000	40000	8097	16194		
75 Pineapple	25000	60000	10121	24291	77 Grape fruit	30000	50000	12146	20243		
50 Cotton	300	1500	121	607	78 Grapes	5000	30000	2024	12146		
51 Tobacco	500	2000	202	810	79 Mandarin/tange	20000	40000	8097	16194		
53 Pyrethrum			0	0	80 Guava	7000	35000	2834	14170		
62 Jute	800	3500	324	1417	81 Plums			0	0		
44 Palm Oil	1200	5000	486	2024	82 Apples			0	0		
45 Coconut	2000	8000	810	3239	83 Pears			0	0		
46 Cashewnut	9	60/tree	4	24	84 Pitches			0	0		

Back Page Reference material

This page contains reference information that may be required to complete some of the questions in the questionnaire.

Weights and measures

1 hectare = 10,000 sq metres (100 x 100 metres)
 1 kilometre = 1000 metres
 1 acre = 4840 square yards (110 x 44 yards)

Conversions

1 hectare = 2.47 acres
 1 mile = 1.61 Kilometres

Kg equivalents

The following standards may be used as a guide to obtain kg if the reported unit is different. Only use these conversions if the respondent is unable to provide weights in kgs.

	Crop Name	Number of Kgs			
		Standard		Non-standard	
		Bag	Tin	Name	kgs
11	Maize	100	18	Rumbesi	140
12	Paddy	75	15		
13	Sorghum	100	18		
14	Bulrush Millet	100	18		
15	Finger Millet	120	20		
16	Wheat	75	15		
17	Barley	75	15		
21	Cassava	60	12		
22	Sweet Potatoe	80	16		
23	Irish potatoes	80	16		
24	Yams	80	16		
25	Cocoyams	80	16		
26	Onions	80	16		
27	Ginger	75	15		
31	Beans	100	20		
32	Cowpeas	100	20		
33	Green ram	100	20		
34	Pigeon pea	100	20		
35	Chick peas	100	20		
36	Bambara nut	100	20		
41	Sunflower	60	12		
42	Simsim	100	20		
43	Groundnut	50	10		
47	Soyabeans	100	20		
48	Caster seed	100	20		
75	Pineapple	90	18		
50	Cotton	50	10		
51	Tobacco	70	14		
53	Pyrethrum	60	12		
62	Jute	50	10		
44	Palm Oil	100			
45	Coconut	75			
46	Cashewnut	80			

	Crop Name	Number of Kgs			
		Standard		Non-standard	
		Bag	Tin	Name	kgs
86	Cabbage	50			
87	Tomatoes	90			
88	Spinach	45			
89	Carrot	110			
90	Chillies	85			
91	Amaranths	50			
92	Pumpkins	60			
93	Cucumber	80			
94	Egg Plant	70			
95	Water Mellon	80			
96	Cauliflower	50			
52	Sisal	130			
54	Coffee	55			
55	Tea	60			
56	Cacao	60			
57	Rubber				
58	Wattle	90			
59	Kapok				
60	Sugar Cane	120			
61	Cardamom	100			
71	Banana	120			
72	Avocado	140			
73	Mangoes	130			
74	Papaw	100			
76	Orange	130			
77	Grape fruit	120			
78	Grapes	80			
79	Mandarin/tange	110			
80	Guava	110			
81	Plums	110			
82	Apples	110			
83	Pears	110			
84	Pitches	110			

For official use only:

If a question has a query, an indication will be made by the supervisor/data entry controller on the front page of the questionnaire. This space is to note what and where the problem is, the action required to be taken and the responsible person to take follow up action.

Nature of the problem:

Action Required: National supervisor action

Field supervisor action

Overall Status: Does not affect overall integrity of the questionnaire.
 More data is required before it can be used

Discard and resample
 Discard as missing data